



# Toll Bridge Seismic Retrofit and Regional Measure 1 Programs

## Monthly Progress Report November 2005

Toll Bridge Program Oversight Committee



Released: December 2005





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Monthly Progress Report  
November 2005

## Toll Bridge Program Oversight Committee



California Department of Transportation



Bay Area Toll Authority



California Transportation Commission



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## Toll Bridges of the San Francisco Bay Area



\* Under the Jurisdiction of the Golden Gate Bridge, Highway and Transportation District

## INTRODUCTION

In July 2005, Assembly Bill 144, Hancock (AB 144) created the Toll Bridge Project Oversight Committee (TBPOC) to implement a project oversight and project control process for the Benicia-Martinez Bridge project and the state toll bridge seismic retrofit program projects. Comprised of the Caltrans Director, the Bay Area Toll Authority (BATA) Executive Director and the Executive Director of the California Transportation Commission (CTC), the TBPOC's project oversight and control processes include but are not limited to reviewing bid specifications and documents, providing field staff to review ongoing costs, reviewing and approving significant change orders and claims in excess of \$1 million (as defined by the committee) and preparing project reports.

AB 144 identified the Toll Bridge Seismic Retrofit Program and the new Benicia-Martinez Bridge Project as under the direct oversight of the TBPOC. The Toll Bridge Seismic Retrofit Program includes:

Toll Bridge Seismic Retrofit Projects	Seismic Safety Status
San Francisco-Oakland Bay Bridge East Span Replacement	Construction
San Francisco-Oakland Bay Bridge West Approach Replacement	Construction
San Francisco-Oakland Bay Bridge West Span Seismic Retrofit	Complete
San Mateo-Hayward Bridge Seismic Retrofit	Complete
Richmond-San Rafael Bridge Seismic Retrofit	Complete
Eastbound Carquinez Bridge Seismic Retrofit	Complete
Benicia-Martinez Bridge Seismic Retrofit	Complete
San Diego-Coronado Bridge Seismic Retrofit	Complete
Vincent Thomas Bridge Seismic Retrofit	Complete

The new Benicia-Martinez Bridge is part of a larger program of toll-funded projects, called the Regional Measure 1 (RM1) Toll Bridge Program, under the responsibility of the BATA. While the rest of the projects in the RM1 program are not directly under the responsibility of the TBPOC, BATA and Caltrans (CT) will continue to report on their progress as an informational item. The RM1 program includes:

RM1 Projects	Open to Traffic Status
New Benicia-Martinez Bridge	Construction
1927 Carquinez Bridge Demolition	Construction
Richmond-San Rafael Bridge Deck Overlay Rehabilitation	Design
Interstate 880/State Route 92 Interchange Reconstruction	Design
Richmond-San Rafael Bridge Trestle, Fender & Deck Joint Rehabilitation	Open
Westbound Carquinez Bridge Replacement	Open
San Mateo-Hayward Bridge Widening	Open
State Route 84 Bayfront Expressway Widening	Open
Richmond Parkway	Open

This report focuses on identifying critical project issues and monitoring project cost and schedule performance for the projects as measured against approved budgets and schedule milestones. This report is intended to fulfill Caltrans' requirement to provide monthly project progress reporting to the TBPOC under Section 30952.05 of the Streets and Highway Code.

## EXECUTIVE SUMMARY

## Toll Bridge Seismic Retrofit Program—Cost (\$Millions)

Project	Work Status	AB 144 / SB 66 Budget	Approved Changes	Current Budget	Actual Cost To Date (10/2005)	Estimate at Completion	At-Completion Variance	Cost Status
a	b	c	d	e = c + d	f	g	h = g - e	i
<b>SFOBB East Span Replacement Project</b>								
Capital Outlay Support		959.4	-	959.4	389.4	977.1	17.7	●
Capital Outlay Construction								
Skyway	Construction	1,293.0	-	1,293.0	928.3	1,293.0	-	●
SAS Superstructure	Advertise	1,753.7	-	1,753.7	-	1,767.4	13.7	●
SAS E2/T1 Foundations	Restart	313.5	-	313.5	65.7	313.5	-	●
YBI Transition Structures	Design	299.3	-	299.3	-	318.4	19.1	●
Oakland Touchdown	Design	283.8	-	283.8	-	272.7	(11.1)	●
South/South Detour	Design/Const	131.9	-	131.9	28.7	133.8	1.9	●
Existing Bridge Demolition	Design	239.2	-	239.2	-	222.0	(17.2)	●
Stormwater Treatment Measures	Design	15.0	-	15.0	-	15.0	-	●
East Span Completed Projects		90.3	-	90.3	89.0	90.3	-	
Right-of-Way and Environmental Mitigation		72.4	-	72.4	38.7	72.4	-	●
Other Budgeted Capital		35.1	-	35.1	-	11.0	(24.1)	
<b>Total SFOBB East Span Replacement Project</b>		<b>5,486.6</b>	<b>-</b>	<b>5,486.6</b>	<b>1,539.8</b>	<b>5,486.6</b>	<b>-</b>	
<b>SFOBB West Approach Replacement</b>								
	Construction							●
Capital Outlay Support		120.0	-	120.0	69.1	120.0	-	
Capital Outlay Construction		309.0	-	309.0	170.0	309.0	-	
<b>Total SFOBB West Approach Replacement</b>		<b>429.0</b>	<b>-</b>	<b>429.0</b>	<b>239.1</b>	<b>429.0</b>	<b>-</b>	
<b>Richmond-San Rafael Bridge Retrofit</b>								
	Construction							●
Capital Outlay Support		134.0	-	134.0	121.9	127.0	(7.0)	
Capital Outlay Construction		780.0	-	780.0	662.8	698.0	(82.0)	
<b>Total Richmond-San Rafael Bridge Retrofit</b>		<b>914.0</b>	<b>-</b>	<b>914.0</b>	<b>784.7</b>	<b>825.0</b>	<b>(89.0)</b>	
<b>Program Completed Projects</b>								
	Complete							
Capital Outlay Support		219.8	-	219.8	219.4	219.8	-	
Capital Outlay Construction		705.6	-	705.6	702.3	705.6	-	
<b>Total Program Completed Projects</b>		<b>925.4</b>	<b>-</b>	<b>925.4</b>	<b>921.7</b>	<b>925.4</b>	<b>-</b>	
Miscellaneous Program Costs		30.0	-	30.0	24.9	30.0	-	
Program Contingency		900.0	-	900.0	-	989.0	89.0	
<b>Total Toll Bridge Seismic Retrofit Program</b>		<b>8,685.0</b>	<b>-</b>	<b>8,685.0</b>	<b>3,510.2</b>	<b>8,685.0</b>	<b>-</b>	

- Within Approved Schedule and Budget
  - Potential Cost and Schedule Impacts: Possible future need for Program Contingency Allocation
  - Known Cost and Schedule Impacts: Request for Program Contingency Allocation forthcoming
- Note: Details may not sum to totals due to rounding effects.



## Toll Bridge Seismic Retrofit Program—Schedule

Project	Project Complete AB 144 / SB 66 Baseline	Project Complete Forecast	Schedule Variance (Months)	Schedule Status	Remarks
a	b	c	d = c - b	e	f
<b>SFOBB East Span Replacement Project</b>					
Skyway	Apr 07	Apr 07	-	●	Fabrication issues concerning the Skyway hinge pipe beams could impact project schedule and budget. See page 10.
SAS Superstructure	Mar 12	Mar 12	-	●	This contract is being re-advertised. See page 12.
SAS E2/T1 Foundations	Jun 08	Mar 08	(3)	●	The suspension of work on this contract has been lifted. Caltrans is negotiating revised cost and schedule for project. See page 14.
YBI Transition Structures	Nov 13	Nov 13	-	●	
Oakland Touchdown	Nov 13	Nov 13	-	●	
YBI South/South Detour	Jul 07	Jul 07	-	●	
Existing Bridge Demolition	Sep 14	Sep 14	-	●	
Stormwater Treatment Measures	Mar 08	Jul 08	4	●	
<i>Open to Traffic Date: West Bound</i>	<i>Sep 11</i>	<i>Sep 11</i>	-	●	
<i>Open to Traffic Date: East Bound</i>	<i>Sep 12</i>	<i>Sep 12</i>	-	●	
<b>SFOBB West Approach Replacement</b>	Aug 09	Aug 09	-	●	
<b>Richmond-San Rafael Bridge Retrofit</b>	Aug 05	Oct 05	2	●	Seismic retrofit completed July 29, 2005. Formal acceptance of this contract on October 28, 2005.

## Regional Measure 1 Program—Cost (\$Millions)

Project	Work Status	July 2005 Budget	Approved Changes	Current Budget	Actual Cost To Date (10/2005)	Estimate at Completion	At-Completion Variance	Cost Status
a	b	c	d	e = c + d	f	g	h = g - e	i
<b>New Benicia-Martinez Bridge Project</b>	Construction							●
Capital Outlay Support		157.1	-	157.1	138.8	178.0	20.9	
Capital Outlay Construction		861.6	-	861.6	707.6	1,004.8	143.2	
Capital Outlay Right-of-Way		20.4	-	20.4	12.0	20.4	-	
Project Reserve		20.8	-	20.8	-	59.8	39.0	
<b>Total New Benicia-Martinez Bridge Project</b>		<b>1,059.9</b>	<b>-</b>	<b>1,059.9</b>	<b>858.4</b>	<b>1,263.0</b>	<b>203.1</b>	
<b>Carquinez Bridge Replacement Project</b>	Construction							●
Capital Outlay Support		124.4	-	124.4	113.7	125.4	1.0	
Capital Outlay Construction		381.2	-	381.2	354.9	383.3	2.1	
Capital Outlay Right-of-Way		10.5	-	10.5	9.9	10.5	-	
Project Reserve		12.1	-	12.1	-	9.0	(3.1)	
<b>Total Carquinez Bridge Replacement Project</b>		<b>528.2</b>	<b>-</b>	<b>528.2</b>	<b>478.5</b>	<b>528.2</b>	<b>-</b>	
<b>Richmond-San Rafael Bridge Deck Overlay Rehabilitation</b>	Design							●
Capital Outlay Support		8.0	-	8.0	1.5	8.0	-	
Capital Outlay Construction		16.9	-	16.9	-	20.7	3.8	
Project Reserve		0.1	-	0.1	-	-	(0.1)	
<b>Total Richmond-San Rafael Bridge Deck Overlay Rehabilitation</b>		<b>25.0</b>	<b>-</b>	<b>25.0</b>	<b>1.5</b>	<b>28.7</b>	<b>3.7</b>	
<b>I-880/SR-92 Interchange Reconstruction</b>	Design							●
Capital Outlay Support		28.8	-	28.8	25.3	43.2	14.4	
Capital Outlay Construction		94.8	-	94.8	-	119.0	24.2	
Capital Outlay Right-of-Way		9.9	-	9.9	7.3	13.0	3.1	
Project Reserve		0.3	-	0.3	-	11.1	10.8	
<b>Total I-880/SR-92 Interchange Reconstruction</b>		<b>133.8</b>	<b>-</b>	<b>133.8</b>	<b>32.6</b>	<b>186.3</b>	<b>52.5</b>	
<b>Program Completed Projects</b>	Complete							
Capital Outlay Support		54.0	-	54.0	53.8	55.6	1.6	
Capital Outlay Construction		307.6	-	307.6	289.5	296.7	(10.9)	
Capital Outlay Right-of-Way		1.5	-	1.5	0.5	0.6	(0.9)	
Project Reserve		1.8	-	1.8	0.2	0.7	(1.1)	
<b>Total Program Completed Projects</b>		<b>364.9</b>	<b>-</b>	<b>364.9</b>	<b>344.0</b>	<b>353.6</b>	<b>(11.3)</b>	
<b>Total Regional Measure 1 Program</b>		<b>2,111.8</b>	<b>-</b>	<b>2,111.8</b>	<b>1,715.0</b>	<b>2,359.8</b>	<b>248.0</b>	

● Within Approved Schedule and Budget

● Potential Cost and Schedule Impacts

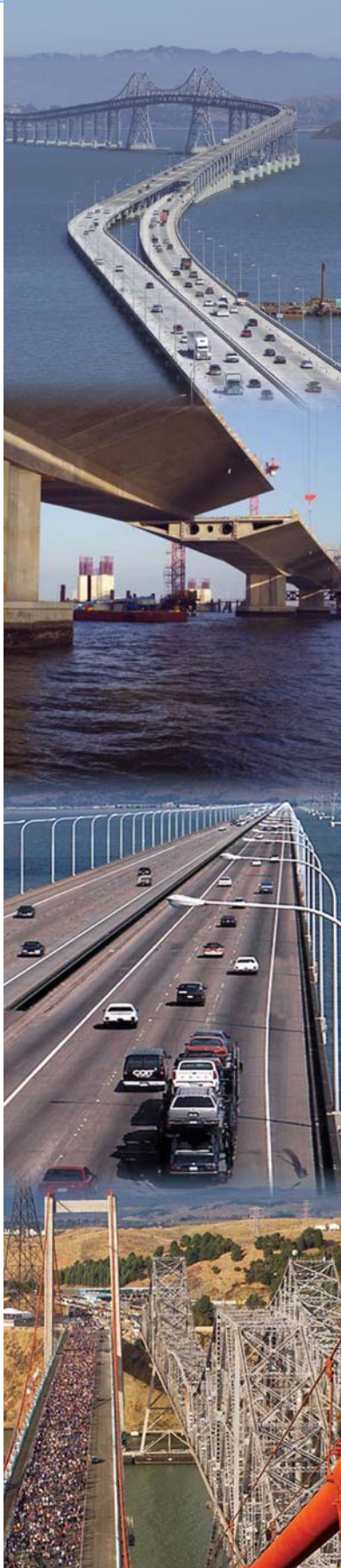
● Known Cost and Schedule Impacts

Note: Details may not sum to totals due to rounding effects.

## Regional Measure 1 Program—Schedule

Project	Project Complete Baseline	Project Complete Forecast	Schedule Variance (Months)	Schedule Status	Remarks
a	b	c	d = c - b	e	f
New Benicia-Martinez Bridge Project	Dec 07	Feb 08	2	●	Construction issues will impact the cost/schedule for this project. See page 32.
<i>New Benicia-Martinez Bridge Open to Traffic Date</i>	<i>Dec 07</i>	<i>Dec 07</i>	-	●	
1927 Carquinez Bridge Demolition Project	Dec 07	Sep 07	(3)	●	
Richmond-San Rafael Bridge Deck Overlay Rehabilitation	Jan 07	Jan 07	-	●	Staff is reviewing the project estimate. See page 39.
I-880/SR-92 Interchange Reconstruction	Nov 10	Dec 10	1	●	Environmental clearance issues have impacted the cost/schedule for this project. See page 40.

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## PROJECT / CONTRACT REPORTS

### Toll Bridge Seismic Retrofit Program

#### San Francisco-Oakland Bay Bridge (SFOBB) East Span Replacement Project Summary

- Skyway Contract
- Self-Anchored Suspension (SAS) Superstructure Contract
- Self-Anchored Suspension (SAS) E2/T1 Foundation Contract
- Yerba Buena Island (YBI) South/South Detour Contract
- Other Major Contracts in Design
- Other Contracts and Related Project Work

#### San Francisco-Oakland Bay Bridge (SFOBB) West Approach Replacement Project

#### Richmond-San Rafael Bridge Seismic Retrofit Project

#### Other Completed Seismic Retrofit Projects



## Toll Bridge Seismic Retrofit Program

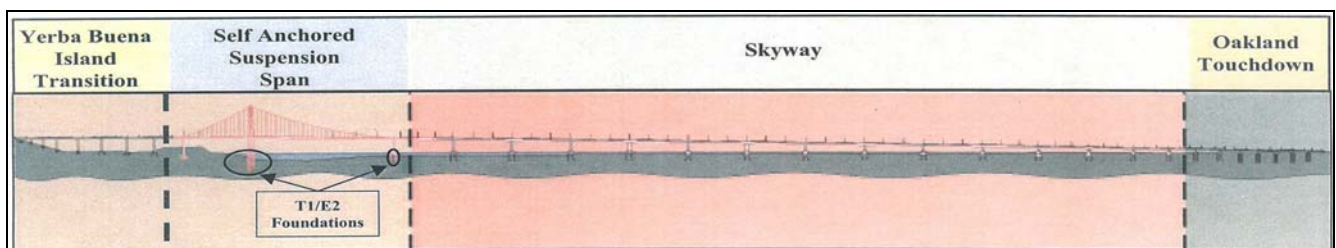
### San Francisco-Oakland Bay Bridge (SFOBB) East Span Replacement Project Summary

**Project Description:** The East Span will be seismically retrofitted through the complete replacement of the existing span. The remaining effort for this project consists of the following contracts: Skyway—construction of two parallel concrete structures, each approximately 1.3 miles in length; Self-Anchored Suspension (SAS) Foundation—construction of SAS marine foundations; SAS Superstructure—construction of a self-anchored 385-meter main span superstructure incorporating a 160-meter fabricated structural steel tower with a main cable and inclined suspenders that will support steel orthotropic decks; Yerba Buena Island (YBI) South/South Detour—design and construction of a temporary double-deck bypass structure that will detour traffic to the existing SFOBB while completing the westerly permanent tie-in structure of the new East Span at Yerba Buena Island; YBI Structures—construction of a new structure connecting the western end of the self-anchored suspension to the Yerba Buena Island viaduct, which will be retrofitted; Oakland Touchdown—at the Oakland end of the East Span, construction of two parallel, cast-in-place post-tensioned concrete viaducts, which join the skyway to the at-grade Oakland approach fill; and Existing Bridge Demolition—demolition of the existing 1936 SFOBB East Span structure after the construction and placement of traffic onto the new East Span.

#### SFOBB East Span Replacement Cost Summary (\$Millions)

Contract	AB 144 / SB 66 Budget	Approved Changes	Current Budget	Cost To Date (10/2005)	Estimate at * Completion	Variance
a	b	c	d = b + c	e	f	g = f - d
Capital Outlay Support	959.4	-	959.4	389.4	977.1	17.7
Capital Outlay Construction	-	-	-	-	-	-
Skyway	1,293.0	-	1,293.0	928.3	1,293.0	-
SAS Superstructure	1,753.7	-	1,753.7	-	1,767.4	13.7
SAS E2/T1 Foundations	313.5	-	313.5	65.7	313.5	-
YBI Structures	299.3	-	299.3	-	318.4	19.1
Oakland Touchdown	283.8	-	283.8	-	272.7	(11.1)
YBI South/South Detour	131.9	-	131.9	28.7	133.8	1.9
Existing Bridge Demolition	239.2	-	239.2	-	222.0	(17.2)
Stormwater Treatment Measures	15.0	-	15.0	-	15.0	-
East Span Completed Projects	90.3	-	90.3	89.0	90.3	-
Right-of-Way and Environmental Mitigation	72.4	-	72.4	38.7	72.4	-
Other Budgeted Capital	35.1	-	35.1	-	11.0	(24.1)
<b>TOTAL</b>	<b>5,486.6</b>	<b>-</b>	<b>5,486.6</b>	<b>1,539.8</b>	<b>5,486.6</b>	<b>-</b>

Note: Details may not sum to totals due to rounding effects.



SFOBB East Span Replacement Project

**SFOBB East Span Replacement Schedule Summary**

Contract	Baseline Project Completion Date	Forecast Project Completion Date	Variance (Months)
Skyway	April 2007	April 2007	-
YBI South / South Detour	July 2007	July 2007	-
Stormwater Treatment Measures	March 2008	July 2008	4
SAS E2/T1 Foundations	June 2008	March 2008	(3)
Open to Traffic: West Bound	September 2011	September 2011	-
SAS Superstructure	March 2012	March 2012	-
Open to Traffic: East Bound	September 2012	September 2012	-
Oakland Touchdown	November 2013	November 2013	-
YBI Transition Structure	November 2013	November 2013	-
Existing Bridge Demolition	September 2014	September 2014	-

**Project Status:** Construction is currently ongoing on the Skyway and the YBI South/South Detour contracts. The SAS E2/T1 Foundation contract is currently in the process of restarting, and the SAS Superstructure contract has been re-advertised. See the following contract detail pages for more information. As part of an ongoing cost review process, Caltrans is reporting changes to the Estimate at Completion amounts for the project. Currently, these charges can be funded from contingencies in Other Budgeted Capital.

Note that the 14 month difference between the East Bound opening to traffic and the completion of the Oakland Touchdown contract is due to the need to complete various surrounding work at the Oakland Touchdown, including removal of the at-grade East Bound detour, the construction of a new maintenance road, removal of the temporary maintenance road detour, bike path and parking lot construction, and landscaping.

**Project Issues:** The results of the preliminary SAS and E2-T1 quantitative schedule risk analysis indicate that there is approximately an eighty percent probability that the SAS contract date of completion may be extended (whether by contractor, third party, weather, owner, or other excusable delay) by up to 21 months from the AB 144 / SB 66 schedule. It should be noted that this preliminary probabilistic schedule analysis does not consider many of the schedule risk responses subsequently identified and implemented, such as implementation of the fabrication action and solution team (FAST), potential Jones Act clarifications, and ongoing SAS contract addenda enhancements. Moreover, about half of the contract extension potential relates to the submission and review of tower shop drawings, and the fabrication and delivery of the lower tower sections. Contentious issues regarding quality and code interpretations may arise during review of shop drawings. There is considerable welding involved in the fabrication of the tower sections, giving rise to possible issues due to tight tolerances and different interpretations of welding codes and welding sequences. While these delay potentials exist now, there are risk responses such as FAST, the campus concept for integrating supplier/fabricator/Caltrans teams, and a review of the COS resources that can mitigate many of the delay-causing possibilities. As these responses will be implemented, their effectiveness in reducing the delay risks will be reassessed, and the schedule delay risk will be adjusted accordingly. Caltrans and TBPOC are and will be taking affirmative actions to mitigate any potential issues that may lead to schedule delays as described in the risk management plan.

The Federal Highway Administration (FHWA) has been conducting an assessment of the costs of the East Span which has included a focus on risk issues and associated cost impacts.

**Recent TBPOC Actions:** In October the TBPOC approved Addendum 3 and in November, Addendum 4 to the SAS bid documents, as well as approving the contract change order that restarts work on the SAS E2/T1 Foundation contract. See the following contract detail pages for more information.

## Toll Bridge Seismic Retrofit Program

### San Francisco-Oakland Bay Bridge (SFOBB) East Span Replacement Project

#### ► SKYWAY CONTRACT

**Contract Description:** The Skyway contract constructs two parallel pre-cast concrete approach spans from Oakland to the self-anchored suspension span near Yerba Buena Island.

#### Skyway Cost Summary (\$Millions)

Contract	AB 144 / SB 66 Budget	Approved Changes	Current Budget	Cost To Date (10/2005)	Estimate at Completion	Variance
a	b	c	d = b + c	e	f	g = f - d
East Span - Skyway						
Capital Outlay Support	197.0	-	197.0	115.1	197.0	-
Capital Outlay Construction	1,293.0	-	1,293.0	928.3	1,293.0	-
<b>TOTAL</b>	<b>1,490.0</b>	<b>-</b>	<b>1,490.0</b>	<b>1,043.4</b>	<b>1,490.0</b>	<b>-</b>

*Note: Details may not sum to totals due to rounding effects.*

#### Skyway Schedule Summary

Contract	Baseline Contract Completion Date	Forecast Contract Completion Date	Variance (Months)
East Span - Skyway	April 2007	April 2007	-

**Contract Status:** The Skyway contract is currently in construction and is 82% complete as of October 20, 2005. Work was completed on the two remaining footing boxes that support the bridge. The pier tables on the eastbound structure are complete, while the westbound structure has six pier tables complete and six other in various stages of construction. The pre-cast yard in Stockton continues casting segments. Segment erection activities are ongoing. To date, 375 of the 452 pre-cast concrete deck sections have been fabricated; 242 have been installed. Caltrans and the Contractor have commenced with holding hearings before a Dispute Resolution Board (DRB) as a means of resolving issues concerning the hinge pipe beams.

#### Contract Issues:

Issue	Mitigating Action
A schedule delay is currently projected by the contractor due to issues with the fabrication of the hinge pipe beams that connect the major frames of the bridge.	While Caltrans is evaluating the contractor's fabrication methodology for the pipe beams, the contractor is currently mitigating the schedule delays by resequencing segment erection activities. The projected delay to the Skyway project is not expected to delay the overall open-to-traffic date for the East Span Replacement project.

**Recent TBPOC Actions:** In October 2005, TBPOC approved the execution of Contract Change Order 90 (Revised Bike Path) and Contract Change Order 107 (Disruptions Associated with the Construction of Precast Segments for Cantilever E12E).

## Contract Photographs

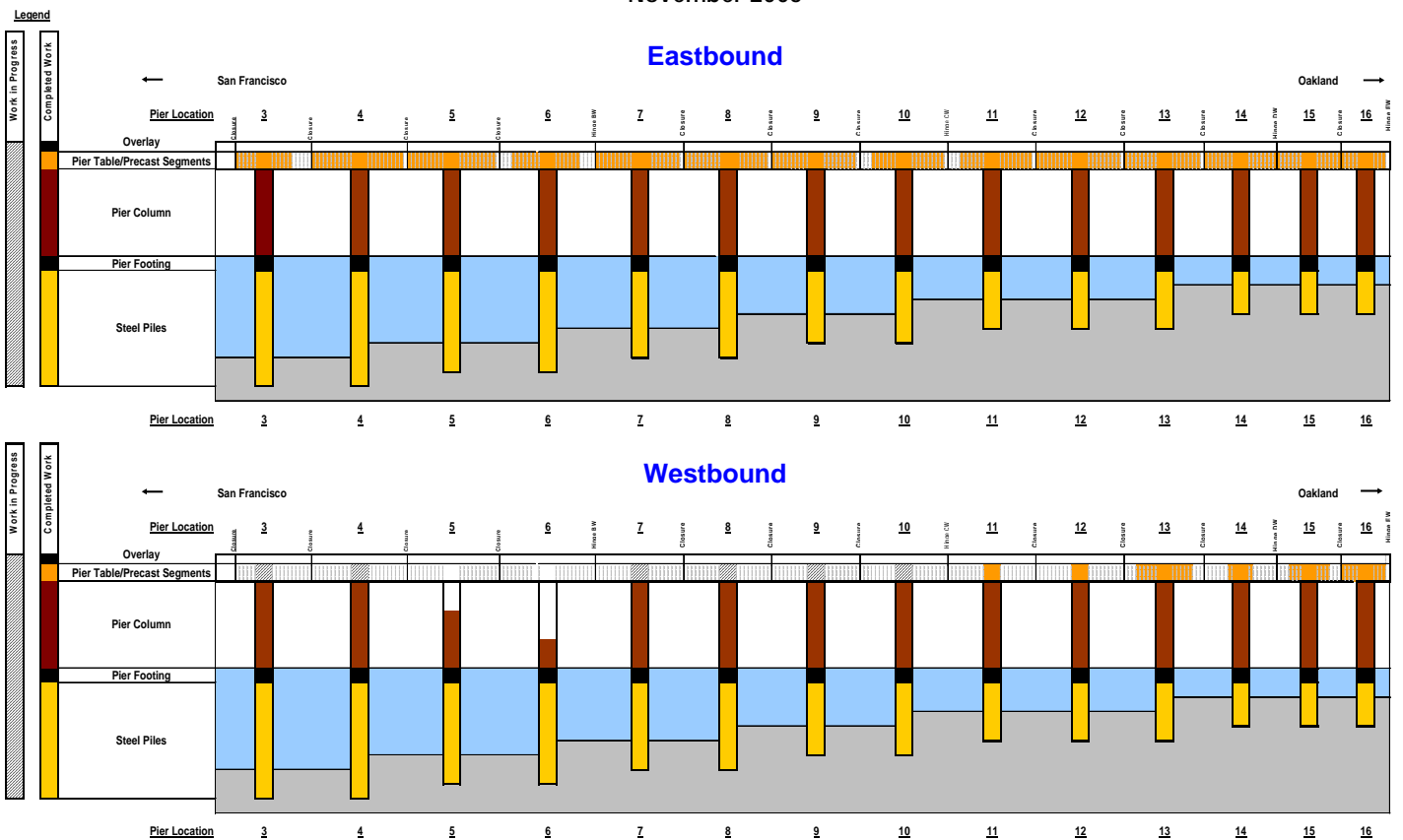


Installation of bike path supports on the Eastbound Skyway structure



Concrete pour for the top slab of the last remaining Skyway foundation

### San Francisco-Oakland Bay Bridge East Span Replacement Project - Skyway Contract November 2005



## Toll Bridge Seismic Retrofit Program

### San Francisco-Oakland Bay Bridge (SFOBB) East Span Replacement Project

#### ► SELF-ANCHORED SUSPENSION (SAS) SUPERSTRUCTURE CONTRACT

**Contract Description:** The Self-Anchored Suspension (SAS) Superstructure contract constructs a signature tower span between the skyway and the Yerba Buena Island transition structure. Work on the SAS bridge has been split between three contracts—the SAS Superstructure (in advertisement), the SAS E2/T1 Foundation (under construction), and the SAS W2 Foundation (completed).

#### SAS Superstructure Cost Summary (\$Millions)

Contract	AB 144 / SB 66 Budget	Approved Changes	Current Budget	Cost To Date (10/2005)	Estimate at Completion	Variance
a	b	c	d = b + c	e	f	g = f - d
East Span - SAS Superstructure						
Capital Outlay Support	214.6	-	214.6	14.7	214.6	-
Capital Outlay Construction	1,753.7	-	1,753.7	-	1,767.4	13.7
<b>TOTAL</b>	<b>1,968.3</b>	<b>-</b>	<b>1,968.3</b>	<b>14.7</b>	<b>1,982.0</b>	<b>13.7</b>

*Note: Details may not sum to totals due to rounding effects.*

#### SAS Superstructure Schedule Summary

Contract	Baseline Contract Completion Date	Forecast Contract Completion Date	Variance (Months)
East Span - SAS Superstructure	March 2012	March 2012	-

**Contract Status:** The SAS Superstructure Contract was re-advertised on August 1, 2005. Bid opening is scheduled for February 1, 2006. Two contractor outreach sessions were held during August, 2005. A Contractor/Fabricator/Supplier meeting was held on September 23, 2005. Caltrans is currently evaluating and responding to contractor inquiries (200 as of 11/08, 165 have been responded to) and preparing addenda to the contract plans and specifications as necessary. Key technical issues being addressed are the following:

- ◆ Caltrans has identified some areas for clarifications to the contract specifications to improve the method of work for the project.
- ◆ Caltrans is currently performing analyses to determine potential specification revisions to be included in addenda.

The estimate-at-completion forecast for the project was increased by \$13.7 million to cover actions taken to encourage additional bidders for the project, including the increase to the bidder's stipend to \$3 million for the lowest three responsive bidders, and to accelerate delivery of the project, including accelerating working drawing and progress schedule submittals. Currently, these charges can be funded from contingencies in Other Budgeted Capital.



**Contract Issues:**

Issue	Mitigating Action
Caltrans' Risk Management evaluation of the project identified the potential lack of bidder competition as the greatest risk to maintaining project cost and schedule.	To increase number of bidders, the TBPOC has approved actions to de-federalize the SAS contract, revise the Cost Reduction Incentive Program (CRIP) to be more financially advantageous to contractors, increase the bidder's stipend to \$3 million to the lowest three responsive bidders, and hold additional contractor outreach sessions.

**Recent TBPOC Actions:** In October 2005, the TBPOC approved Addendum 3, and Addendum 4 in November 2005 which are comprised of a number of technical specification changes, including revisions based on bidder inquiries.

**Contract Photographs**

*SAS Superstructure Artist Rendition*



*Western end of the Skyway contract that will connect with the future SAS contract*

## Toll Bridge Seismic Retrofit Program

### San Francisco-Oakland Bay Bridge (SFOBB) East Span Replacement Project

#### ► SELF-ANCHORED SUSPENSION (SAS) E2/T1 FOUNDATIONS CONTRACT

**Contract Description:** The Self-Anchored Suspension (SAS) E2/T1 Foundation contract constructs the main tower foundation at T1 and the adjacent east foundation at E2.

#### SAS E2/T1 Foundation Cost Summary (\$ Millions)

Contract	AB 144 / SB 66 Budget	Approved Changes	Current Budget	Cost To Date (10/2005)	Estimate at Completion *	Variance
a	b	c	d = b + c	e	f	g = f - d
East Span - SAS E2 / T1 Foundations						
Capital Outlay Support	52.5	-	52.5	7.3	52.5	-
Capital Outlay Construction	313.5	-	313.5	65.7	313.5	-
<b>TOTAL</b>	<b>366.0</b>	<b>-</b>	<b>366.0</b>	<b>73.0</b>	<b>366.0</b>	<b>-</b>

*Note: Details may not sum to totals due to rounding effects.*

#### SAS E2/T1 Foundation Schedule Summary

Contract	Baseline Contract Completion Date	Forecast Contract Completion Date	Variance (Months)
East Span - SAS E2 / T1 Foundations	June 2008	March 2008	(3)

**Contract Status:** Work on the project was suspended in January 2005. Approximately 29% of the work on the project was completed prior to the suspension of work. Most of the completed work was the fabrication of steel piles. The original contract cost for the project was \$177 million. On July 29, 2005, Caltrans notified the contractor to restart the work on the project. The proposal for the revised schedule was received from the contractor by September 23, 2005. Negotiations between Caltrans and the contractor are nearing conclusion.

#### Contract Issues:

Issue	Mitigating Action
E2/T1 Foundations contract must be completed by March 2008 to avoid impact to the SAS Superstructure Contract.	Caltrans has restarted negotiations. This is a high priority action so that the Contractor can resume all work as quickly as possible. Final negotiations are expected to have a significant impact on the project budget and could impact the schedule of the SAS project.
Gaining firm commitment dates for cost-effective steel delivery from suppliers as part of E2/T1 Foundations restart is critical to resuming work.	Caltrans is focused on staying current with issues concerning the restart of the steel supply, to include replacing suppliers if required.

**Recent TBPOC Actions:** In November 2005, the TBPOC approved CCO 29 concerning the restart of work on this contract.

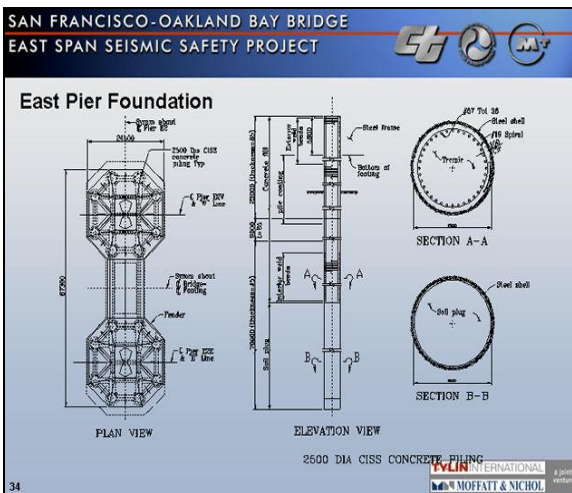
## Project Photographs



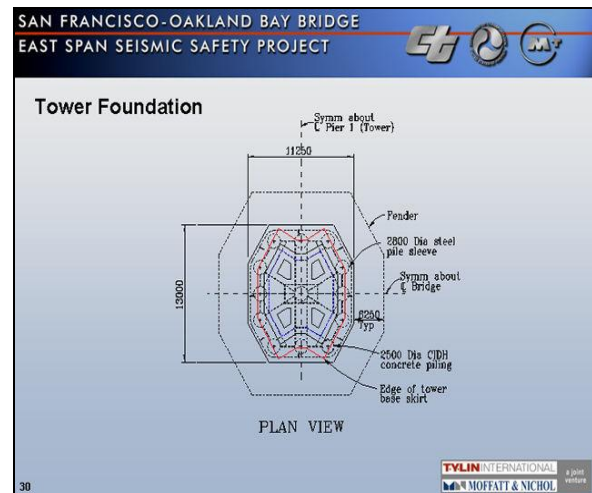
T1 = Foundation for the 530-foot steel tower  
 E2 = Eastern Support of the suspension roadway  
 W2 = Western Support of the suspension roadway



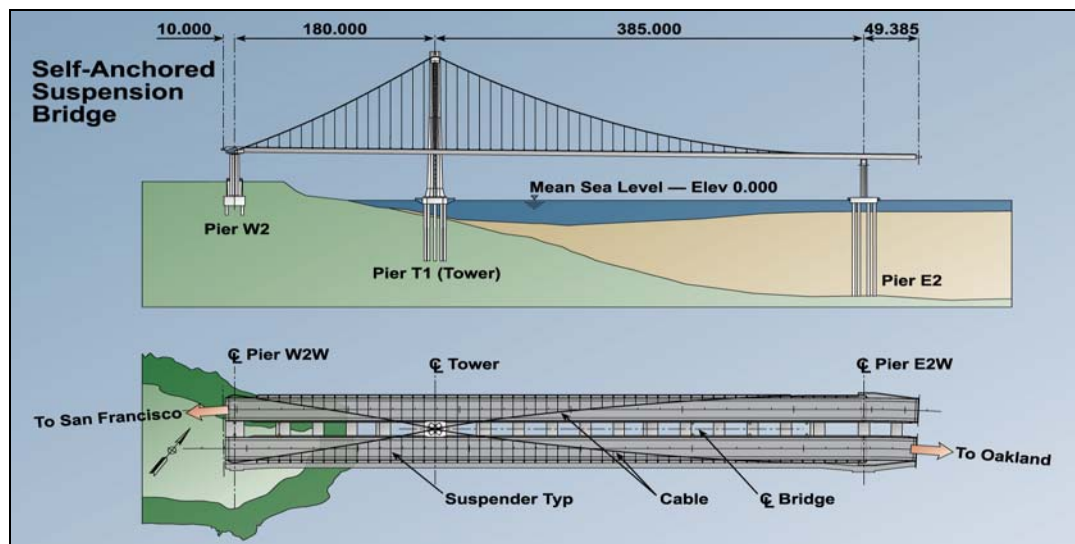
View of the completed W2 pier columns at the Yerba Buena Island, which will be the western support of the Self-Anchored Suspension (SAS) structure



East Pier Foundation



Tower Foundation



## Toll Bridge Seismic Retrofit Program

**San Francisco-Oakland Bay Bridge (SFOBB) East Span Replacement Project****► YERBA BUENA ISLAND (YBI) SOUTH/SOUTH DETOUR CONTRACT**

**Contract Description:** The Yerba Buena Island (YBI) South/South Detour Contract constructs a temporary detour from the YBI tunnel to the existing east span of the Bay Bridge. This detour maintains traffic on the existing bridge while the YBI Transition Structure Contract completes the tie-in from the SAS to the existing tunnel.

**YBI South/South Detour Cost Summary (\$Millions)**

Contract	AB 144 / SB 66 Budget	Approved Changes	Current Budget	Cost To Date (10/2005)	Estimate at Completion	Variance
a	b	c	d = b + c	e	f	g = f - d
YBI South/South Detour						
Capital Outlay Support	29.5	-	29.5	13.3	29.5	-
Capital Outlay Construction	131.9	-	131.9	28.7	133.8	1.9
<b>TOTAL</b>	<b>161.4</b>	<b>-</b>	<b>161.4</b>	<b>42.0</b>	<b>163.3</b>	<b>1.9</b>

*Note: Details may not sum to totals due to rounding effects.*

**YBI South/South Detour Schedule Summary**

Contract	Baseline Contract Completion Date	Forecast Contract Completion Date	Variance (Months)
YBI South / South Detour	July 2007	July 2007	-

**Contract Status:** The contract is 33% complete as of October 20, 2005. To minimize impacts on the traveling public, portions of the East and West Tie-in operations remain suspended. The contract is performance based, whereby the contractor is responsible for both designing and constructing the detour structures. The contractor has formed and poured columns at Bent 49. Construction of the other bents are also in progress. The contractor's engineer continues to perform design work on the east and west tie-in structures for the detour.

Caltrans is forecasting a \$1.9 million increase in budget for the South/South Detour contract due to an extension of the contract to integrate with the schedule of the re-advertised SAS contract. See Contract Issues below.

**Contract Issues:**

Issue	Mitigating Action
Delay to the SAS contract due to re-advertising has extended the South/South Detour Contract, so as to integrate with the schedule of the SAS contract.	Caltrans is currently reviewing the project costs and schedule based on the revised SAS E2/T1 Foundation and SAS Superstructure project milestones to determine the optimum project schedule for the South/South Detour contract. A revised schedule for the project will likely increase contract costs.

**Recent TBPOC Actions:** None.



**Contract Photographs**

*Temporary Bypass Structure (in yellow)*



*Drilling for CIDH piles for Bent 53*



*View of the pier column construction for Bents 48-51 at the South-South Detour at the Yerba Buena Island*



## Toll Bridge Seismic Retrofit Program

### San Francisco-Oakland Bay Bridge (SFOBB) East Span Replacement Project

#### ► OTHER MAJOR CONTRACTS IN DESIGN

**Contract Description:** Caltrans is currently designing a number of other major construction contracts that will be necessary prior to opening the new east span, including the Oakland Touchdown and the YBI Transition Structure. Following opening of the new bridge, the existing bridge will be removed with the Bridge Demolition contract.

#### Other Major Contracts Cost Summary (\$Millions)

Contract	AB 144 / SB 66 Budget	Approved Changes	Current Budget	Cost To Date (10/2005)	Estimate at Completion	Variance
a	b	c	d = b + c	e	f	g = f - d
Capital Outlay Support	238.8	-	238.8	30.1	256.5	17.7
Capital Outlay Construction						-
YBI Transition Structure	299.3	-	299.3	-	318.4	19.1
Oakland Touchdown	283.8	-	283.8	-	272.7	(11.1)
Demolition	239.2	-	239.2	-	222.0	(17.2)
Stormwater Treatment Measures	15.0	-	15.0	-	15.0	-
Total Capital Outlay Construction	837.3	-	837.3	-	828.1	(9.2)
<b>TOTAL</b>	<b>1,076.1</b>	<b>-</b>	<b>1,076.1</b>	<b>30.1</b>	<b>1,084.6</b>	<b>8.5</b>

*Note: Details may not sum to totals due to rounding effects.*

#### Other Major Contracts Schedule Summary

Project	Baseline Project Completion Date	Forecast Project Completion Date	Variance (Months)	Design % Complete
Stormwater Treatment Measures	March 2008	July 2008	4	100
YBI Transition Structure	November 2013	November 2013	-	80
Oakland Touchdown	November 2013	November 2013	-	TBD
Existing Bridge Demolition	September 2014	September 2014	-	10

#### Contract Status:

**Stormwater Treatment Measures:** This contract to implement best practices for stormwater runoff treatment will be advertised in early 2006. BATA approved the bid documents for this project for advertisement on October 26, 2005.

**Oakland Touchdown:** The TBPOC authorized Caltrans to split the Oakland Touchdown project into multiple contracts to accelerate work and to reduce the risk of any of this work impacting the critical path for the project. The first contract would construct all the marine foundation work and west-bound approach work earlier to keep the work off the project's critical path. The second contract would construct the remaining east-bound approach when west-bound traffic is shifted onto the new SAS. The third contract would replace the existing submarine electrical cable from Oakland to Treasure Island and will be the first to be constructed to avoid possible

construction conflicts. The fourth contract would incorporate most of the electrical elements from OTD as well as from other segments of the East Span into a single contract. Due to the split, the capital outlay forecast for this work has been reduced from \$283.8 million to \$272.7 million, saving \$11.1 million. However, the capital outlay support for the contract was increased to cover the additional work to split the contract and to administer four separate contracts over a longer duration rather than the original single contract. Currently, these charges can be funded from contingencies in Other Budgeted Capital.

**YBI Transition Structure:** This contract is currently being designed by Caltrans. Caltrans has also initiated a value analysis effort on the project to evaluate the current design. As part of an ongoing cost review process, Caltrans is reporting a \$19.1 million increase in the Estimate at Completion amounts for the contract. Most of the cost increase is due to a higher estimate for electrical work and scheduling. Currently, these charges can be funded from contingencies in Other Budgeted Capital.

**Bridge Demolition:** Design work has not yet been initiated for this contract. Caltrans recent budget estimates reduce the budget for the demolition work by \$17.2 million due to a re-evaluation of the cost escalation rates.

**Recent TBPOC Actions:** In September, the TBPOC authorized Caltrans to split the Oakland Touchdown project into multiple contracts for advertisement.

#### Contract Photographs



*Artist's Rendition of Oakland touchdown Aerial View*

## Toll Bridge Seismic Retrofit Program

### San Francisco-Oakland Bay Bridge (SFOBB) East Span Replacement Project

#### ► OTHER COMPLETED CONTRACTS AND RELATED WORK

**Summary Description:** Substantial work has already been performed on the SFOBB East Span Replacement project to facilitate construction of the mainline construction contracts.

#### Other Contracts and Related Work Cost Summary (\$Millions)

Contract	AB 144 / SB 66 Budget	Approved Changes	Current Budget	Cost To Date (10/2005)	Estimate at Completion	Variance
a	b	c	d = b + c	e	f	g = f - d
Capital Outlay Support	227.0	-	227.0	208.9	227.0	-
Right-of-Way and Environmental Mitigation	72.4	-	72.4	38.7	72.4	-
Capital Outlay Construction						-
SAS W2 Foundations	26.4	-	26.4	25.7	26.4	-
YBI/SAS Archeology	1.1	-	1.1	1.1	1.1	-
YBI - USCG Road Relocation	3.0	-	3.0	2.8	3.0	-
YBI - Substation and Viaduct	11.6	-	11.6	11.2	11.6	-
Oakland Geofill	8.2	-	8.2	8.2	8.2	-
Pile Installation Demonstration Project	9.2	-	9.2	9.2	9.2	-
Existing East Span Retrofit	30.8	-	30.8	30.8	30.8	-
Total Capital Outlay Construction Completed	90.3	-	90.3	89.0	90.3	-
<b>TOTAL</b>	<b>389.7</b>	<b>-</b>	<b>389.7</b>	<b>336.6</b>	<b>389.7</b>	<b>-</b>

*Note: Details may not sum to totals due to rounding effects.*

#### Other Contracts and Related Work Schedule Summary

Project	Actual Project Completion Date
Existing East Span Retrofit	October 1997
Interim Retrofit	July 2000
Pile Installation Demolition Project	December 2000
YBI / SAS Archaeology	January 2003
Oakland Geofill	April 2003
YBI – USCG Road Relocation	June 2004
SAS W2 Foundations	October 2004
YBI Substation and Viaduct	May 2005

**Summary Status:** Construction has been completed on the above listed contracts. Caltrans continues to work with various environmental agencies to mitigate any environmental impacts from the project.

**Contract Issues:** None.

**Recent TBPOC Actions:** None.

**Project Photographs**

*San Francisco-Oakland Bay Bridge Night View*



*San Francisco-Oakland Bay Bridge Aerial View*

## Toll Bridge Seismic Retrofit Program

### San Francisco-Oakland Bay Bridge (SFOBB) West Approach Replacement Project

**Project Description:** The SFOBB West Approach Replacement Project will replace the entire west approach structure from the 5<sup>th</sup> Street to the west anchorage of the existing west spans of the SFOBB while maintaining existing traffic lanes for the weekday commute.

#### SFOBB West Approach Replacement Cost Summary (\$Millions)

Contract	AB 144 / SB 66 Budget	Approved Changes	Current Budget	Cost To Date (10/2005)	Estimate at Completion	Variance
a	b	c	d = b + c	e	f	g = f - d
West Approach						
Capital Outlay Support	120.0	-	120.0	69.1	120.0	-
Capital Outlay Construction	309.0	-	309.0	170.0	309.0	-
<b>TOTAL</b>	<b>429.0</b>	<b>-</b>	<b>429.0</b>	<b>239.1</b>	<b>429.0</b>	<b>-</b>

*Note: Details may not sum to totals due to rounding effects.*

#### SFOBB West Approach Replacement Schedule Summary

Project	Baseline Project Completion Date	Forecast Project Completion Date	Variance (Months)
West Approach	August 2009	August 2009	-

**Project Status:** Construction work is 59% complete as of October 20, 2005, which includes mobilization. Seismic retrofitting construction is continuing throughout the project. I-80 demolition operations for frame 7U(N) occurred over five weekends from the end of September through October and are complete. The contractor has begun the erection of falsework for construction of new frame 7U(N). The Harrison Street off-ramp was closed for reconstruction on September 6, 2005, and will remain closed for three years. Demolition of this ramp occurred the weekend of November 4-6, 2005. Impacts to the adjacent neighborhood were minimized through completion of this demolition in only one weekend.

#### Project Issues

Issue	Mitigating Action
Caltrans is preparing a supplemental funds request to augment the contract contingencies in the amount of approximately \$10 million.	No mitigating action is required as funds are available in the AB 144 / SB 66 project allotment.

**Recent TBPOC Actions:** In October 2005, the TBPOC approved CCO #95 related to work at Frame 7U(N).



**Project Photographs***Harrison St. Off-ramp Pre-demolition 1**Harrison St. Off-ramp Pre-demolition 2**Harrison St. Off-ramp Demolition 1**Harrison St. Off-ramp Demolition 2**Harrison St. Off-ramp Demolition 3**Harrison St. Off-ramp Demolition 4*

## Toll Bridge Seismic Retrofit Program

### Richmond-San Rafael Bridge (RSRB) Seismic Retrofit Project

**Project Description:** The Richmond-San Rafael (RSR) Bridge Seismic Retrofit Project strengthened the existing bridge to withstand the effects of a large seismic event. As part of the retrofit work, Caltrans performed work to strengthen the bridge foundations, replace the existing west trestle, the main channel fenders, and the joint rehabilitation of the bridge deck. (The RM1 work is reported in the RM1 section of the report).

#### RSRB Seismic Retrofit Cost Summary (\$Millions)

Contract	AB 144 / SB 66 Budget	Approved Changes	Current Budget	Cost To Date (10/2005)	Estimate at Completion	Variance
a	b	c	d = b + c	e	f	g = f - d
RSRB Seismic Retrofit						
Capital Outlay Support	134.0	-	134.0	121.9	127.0	(7.0)
Capital Outlay Construction	780.0	-	780.0	662.8	698.0	(82.0)
<b>TOTAL</b>	<b>914.0</b>	<b>-</b>	<b>914.0</b>	<b>784.7</b>	<b>825.0</b>	<b>(89.0)</b>

*Note: Details may not sum to totals due to rounding effects.*

\* The seismic retrofit contract included work to rehabilitate the bridge deck joints. Although the deck joint work was funded from RM1 toll funds, the work is also eligible for Toll Bridge Seismic Retrofit Program funding. In July 2005, BATA rescinded \$16.9 million in RM1 funds for the deck joint work to make additional RM1 funds available for the New Benicia-Martinez Bridge Project. An equivalent amount of seismic funds will be used on the deck joint work, which is included in the budget above. This issue is also discussed in the RM1 portion of the report on page 38.

#### RSRB Seismic Retrofit Schedule Summary

Project	Baseline Project Completion Date	Forecast Project Completion Date	Variance (Months)
RSRB Seismic Retrofit	August 2005	October 2005	2

**Project Status:** Caltrans achieved seismic safety on the bridge in July 2005. Caltrans is expecting at least \$89 million in savings from the AB 144 / SB 66 budget. The construction contract was completed and accepted on October 17, 2005.

**Contract Issues:** None.

**Recent TBPOC Actions:** None.

## Toll Bridge Seismic Retrofit Program

### Other Completed Seismic Retrofit Projects

**Summary Description:** Caltrans has already completed the seismic retrofits of the West Spans of the SFOBB, the existing 1958 Carquinez Bridge, the existing Benicia-Martinez Bridge, the San Mateo-Hayward Bridge, and two former toll bridges in southern California.

#### Other Completed Seismic Retrofit Projects Cost Summary (\$Millions)

Project	AB 144 / SB 66 Budget	Approved Changes	Current Budget	Cost To Date (10/2005)	Estimate at Completion	Variance
a	b	c	d = b + c	e	f	g = f - d
San Francisco-Oakland Bay Bridge West Span Seismic Retrofit Project	307.9	-	307.9	305.2	307.9	-
Carquinez Bridge Retrofit Project	114.2	-	114.2	114.2	114.2	-
Benicia-Martinez Bridge Retrofit Project	177.8	-	177.8	177.8	177.8	-
San Mateo-Hayward Bridge Retrofit Project	163.5	-	163.5	163.4	163.5	-
Vincent Thomas Bridge Retrofit Project	58.5	-	58.5	58.5	58.5	-
San Diego-Coronado Bridge Retrofit Project	103.5	-	103.5	102.6	103.5	-
<b>TOTAL</b>	<b>925.4</b>	<b>-</b>	<b>925.4</b>	<b>921.7</b>	<b>925.4</b>	<b>-</b>

*Note: Details may not sum to totals due to rounding effects. Capital Outlay Support and Capital Outlay have been combined.*

#### Other Completed Seismic Retrofit Projects Schedule Summary

Project	Actual Project Completion Date
Vincent Thomas Bridge Retrofit	May 2000
San Mateo-Hayward Bridge Retrofit	June 2000
Carquinez Bridge Retrofit	January 2002
San Diego-Coronado Bridge Retrofit	June 2002
Benicia-Martinez Bridge Retrofit	August 2002
SFOBB West Span Seismic Retrofit	June 2004

**Summary Status:** Construction has been completed on the above listed projects. The Estimate at Completion amounts shown above include allowances for minor project closeout costs.

**Contract Issues:** None.

**Recent TBPOC Actions:** None.

## Toll Bridge Seismic Retrofit Program

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### Other Toll Bridges

Caltrans has completed its seismic vulnerability studies work for the Antioch and Dumbarton toll bridges.

A Seismic Vulnerability Study is not a complete seismic analysis of the structure, but is an investigation of a few representative bents to determine the likelihood of the need for seismic retrofit. Given the limitations of the vulnerability studies, there is insufficient evidence to conclusively determine the performance of the bridges during a Maximum Credible Event (MCE). A comprehensive seismic analysis based on complete and accurate geotechnical soil data must be performed in order to make a final determination of the level of retrofit required.

#### Background:

**Antioch Bridge.** Located 25 miles upstream from the Benicia-Martinez Bridge, the Antioch Bridge on State Route 160 is the only northerly highway connection across the San Joaquin River linking east Contra Costa County to the delta communities of Rio Vista and Lodi. In 1978, a high-level fixed-span structure 1.6 miles long and 40 feet wide with a narrow shoulder in each direction for bicyclists, pedestrians and emergency use replaced the original bridge constructed in 1926. The Antioch Bridge spans the 3,600-foot wide San Joaquin River and extends 4,000 feet onto Sherman Island in Sacramento County to the north and 1,000 feet in Contra Costa County to the south. The Antioch Bridge has a navigational clearance of 135 feet vertically and 400 feet horizontally. Traffic lanes consist of two 12-foot wide lanes for motor vehicles and two 8-foot lanes for pedestrians and bicyclists.

**Dumbarton Bridge.** In 1978, construction began on the existing Dumbarton Bridge on State Route 84, which was opened to traffic in 1982 at a cost of \$70 million. The Dumbarton Bridge crosses the southern region of San Francisco Bay between the cities of Newark to the east and East Palo Alto to the west, connecting San Mateo and Alameda Counties. It is situated approximately 10 miles south of the San Mateo-Hayward Bridge and 27 miles south of the San Francisco-Oakland Bay Bridge.

The Dumbarton Bridge is a six-lane reinforced concrete structure that is 1.6 miles long with a pedestrian/bicycle lane. The center span, which has a length of 340 feet, provides 85 feet of vertical clearance for the passage of ships.

#### Need for Study

In 1971, a major earthquake occurred in the San Fernando Valley near Los Angeles and severely damaged several bridges in the area. Following the 1971 Southern California earthquake, Caltrans revised its seismic design practice in order to fully incorporate the experience gained from this event. Past reviews of historic bridge performance during subsequent large California earthquakes indicate bridges designed after 1971 have performed very well and significantly better than pre-1971 bridge designs.

The original designs of the Antioch and Dumbarton Bridges were based on design criteria developed after the 1971 San Fernando Earthquake. In the early 1990's, Caltrans determined that these two structures had the seismic resistant features required by the post 1971 codes and were not likely to be vulnerable during a major seismic event. Since that time, Caltrans has pursued an aggressive seismic research program, and based on the results of this program, again significantly revised its seismic practice. Consistent with recommendations by the Caltrans Seismic Advisory Board, Caltrans regularly reassesses the seismic hazard and performance of its bridges. Due to the tremendous changes in seismic design practice that have occurred since the design of the

Antioch and Dumbarton Bridges, a comprehensive assessment of the potential need and scope for seismic retrofit based on current knowledge is prudent.

### **Seismic Vulnerability Study**

The results of the Seismic Vulnerability Studies indicate that the foundation response governs the performance of the bridges during a Maximum Creditable Event (MCE) and this could result in large foundation rotations. These rotations may result in damage to the superstructure and possible damage to the piles.

A cost estimate, schedule, and risk management plan for a comprehensive seismic analysis is being determined at this time.

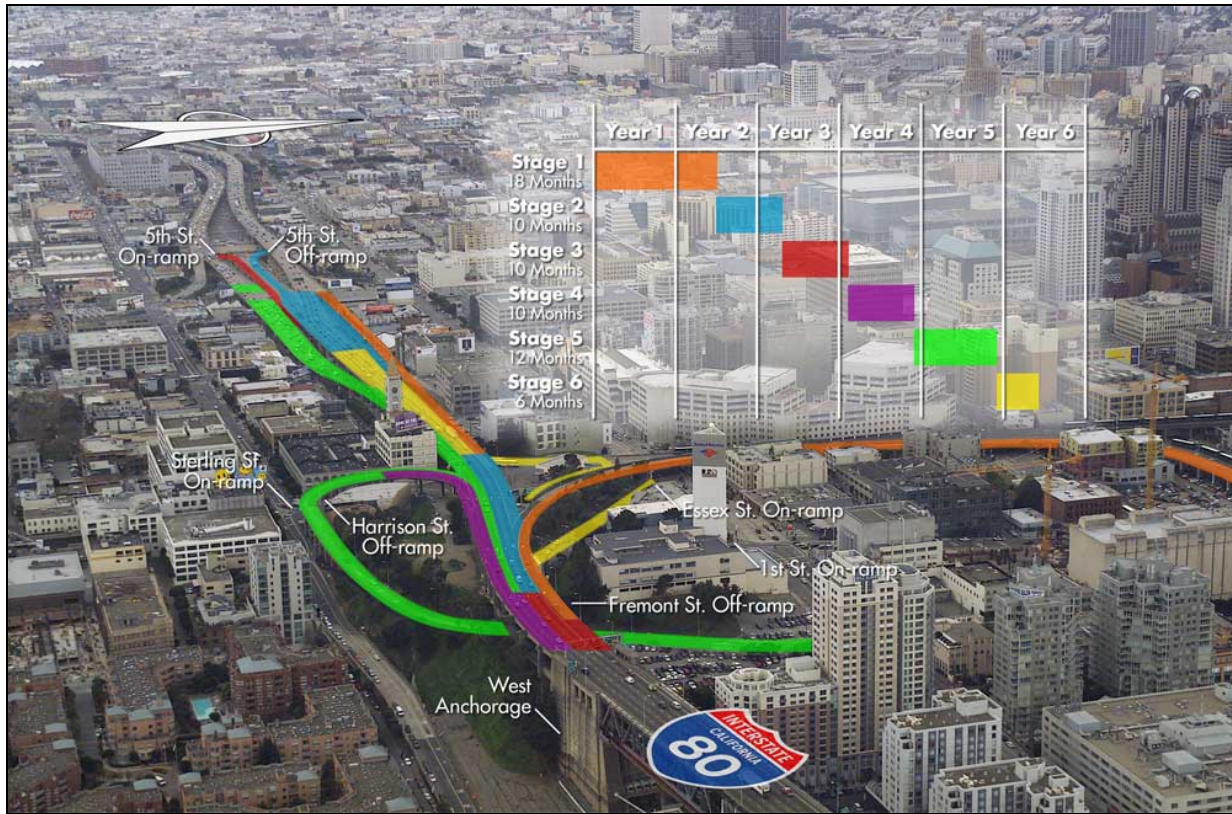


*Antioch Bridge*



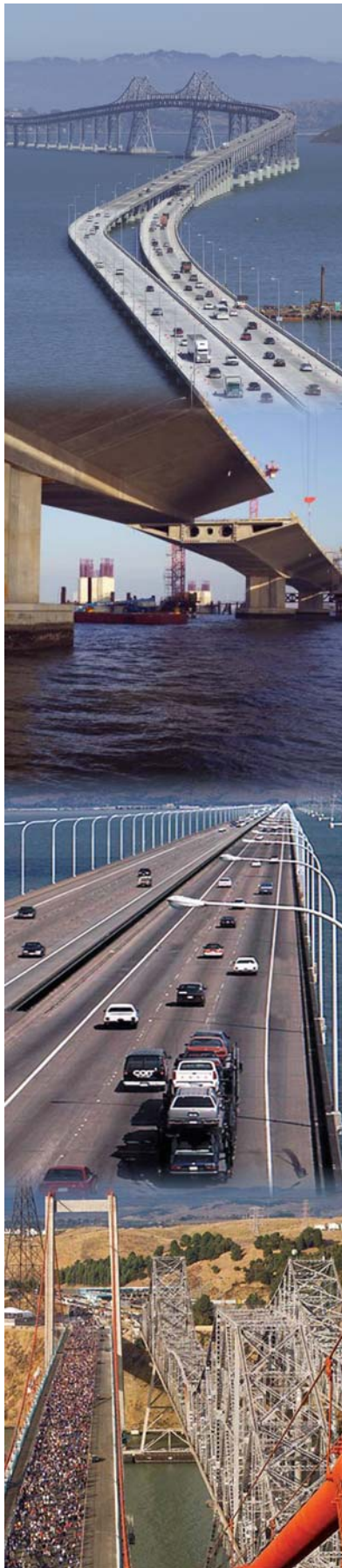
*Dumbarton Bridge*





West Approach Project Stages





## PROJECT / CONTRACT REPORTS

### Regional Measure 1 Program

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#### New Benicia-Martinez Bridge Project Summary

- New Benicia-Martinez Bridge Contract
- Other Contracts and Related Project Activities

#### New Carquinez Bridge Project

#### Richmond-San Rafael Bridge Trestle, Fender, and Deck Joint Rehabilitation Project

#### Richmond-San Rafael Bridge Trestle Deck Overlay Project

#### Interstate 880 / State Route 92 Interchange Reconstruction

#### Other Completed Regional Measure 1 Projects

- San Mateo-Hayward Bridge Widening Project
- Richmond Parkway Project
- Bayfront Expressway Widening Project

## Regional Measure 1 Program

### New Benicia-Martinez Bridge Project Summary

**Project Description:** The new Benicia-Martinez Bridge project constructs a new parallel bridge just east of the existing bridge. The project will include reconstructed interchanges to the north and south of the bridges and a new toll plaza and administration building in Martinez.

#### New Benicia-Martinez Bridge Project Cost Summary (\$Millions)

Contract	June 2005 BATA Budget	Approved Changes	Current Budget	Cost To Date (10/2005)	Estimate at Completion	Variance
a	b	c	d = b + c	e	f	g = f - d
Capital Outlay Support	157.1	-	157.1	138.8	178.0	20.9
Right-of-Way and Others	20.4	-	20.4	12.0	20.4	-
Capital Outlay Construction						-
New Bridge*	672.0	-	672.0	557.9	784.0	112.0
I-680/I-780 Interchange Replacement*	76.3	-	76.3	66.6	92.0	15.7
I-680/Marina Vista Interchange Reconstruction	51.5	-	51.5	50.7	55.0	3.5
New Toll Plaza	24.3	-	24.3	17.6	26.0	1.7
Other	37.5	-	37.5	14.8	47.8	10.3
Project Reserve	20.8	-	20.8	-	59.8	39.0
<b>TOTAL</b>	<b>1,059.9</b>	<b>-</b>	<b>1,059.9</b>	<b>858.4</b>	<b>1,263.0</b>	<b>203.1</b>

*Note: Details may not sum to totals due to rounding effects.*

*\* The budget and estimate at completion includes approximately \$38 million in non-toll bridge funds (Proposition 192 and SHOPP).*

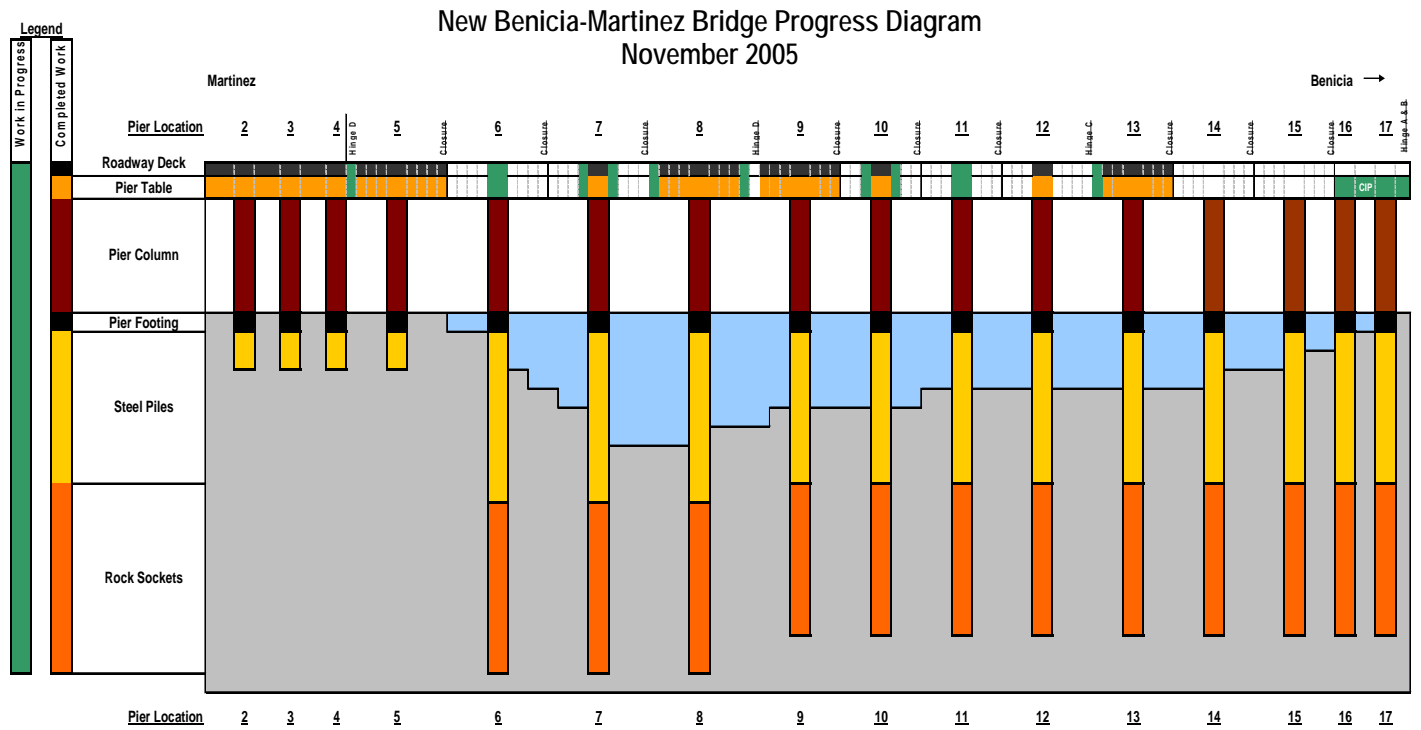
#### New Benicia-Martinez Bridge Project Schedule Summary

Project	Baseline Project Completion Date	Forecast Project Completion Date	Variance (Months)
I-680/Marina Vista Interchange Reconstruction	March 2006	March 2006	-
New Toll Plaza	June 2006	June 2006	-
New Benicia-Martinez Bridge	December 2007	December 2007	-
I-680/I-780 Interchange Replacement	December 2007	February 2008	2
Open to Traffic	December 2007	December 2007	-

**Project Status:** All major construction projects necessary to open the bridge are currently in construction. Numerous foundation and superstructure issues have significantly delayed the new bridge contract. See the following contract detail pages for more information. Note that the remaining expenditures required on the “Right-of-Way and Others” category represents environmental permitting and mitigation.

**Project Issues:** See the following contract detail pages for more information.

**Recent TBPOC Actions:** See the following contract detail pages for more information.



### Project Photographs



*Benicia Toll Plaza - Installation of Toll Booth Canopy Fascia*



*Marina Vista - Polystyrene Styrofoam Expandable Block Placement*

## Regional Measure 1 Program

### New Benicia-Martinez Bridge Project

#### ► NEW BENICIA-MARTINEZ BRIDGE CONTRACT

**Contract Description:** The new bridge contract constructs a new cast-in-place segmentally constructed reinforced concrete bridge just east of the existing bridge. The new bridge will carry five lanes of eastbound I-680 traffic towards Benicia.

#### New Benicia-Martinez Bridge Cost Summary (\$Millions)

Contract	June 2005 BATA Budget	Approved Changes	Current Budget	Cost To Date (10/2005)	Estimate at Completion	Variance
a	b	c	d = b + c	e	f	g = f - d
New Benicia-Martinez Bridge						
Capital Outlay Support	84.9	-	84.9	67.6	98.0	13.1
Capital Outlay Construction	672.0	-	672.0	557.9	784.0	112.0
<b>TOTAL</b>	<b>756.9</b>	<b>-</b>	<b>756.9</b>	<b>625.5</b>	<b>882.0</b>	<b>125.1</b>

*Note: Details may not sum to totals due to rounding effects.*

#### New Benicia-Martinez Bridge Schedule Summary

Contract	Baseline Contract Completion Date	Forecast Contract Completion Date	Variance (Months)
New Benicia-Martinez Bridge	December 2007	December 2007	-

**Contract Status:** The contract is 81% complete. The superstructure concrete is in place and post tensioned from the south abutment to pier 4, and barrier rail construction is in progress. Superstructure segments have been cast at piers 5 and 9, while segments are being cast at piers 7, 8, 10 and 13. In order to maintain concrete temperature within the specified limits, cooling tubes are being installed in the segments and a nitrogen station is in operation for cooling the concrete in the delivery trucks. 119 of 344 segments are complete as of the end of October 2005, for the above mentioned piers. Ten tower cranes are installed and operational. Pier table construction continues at piers 6 and 11, and column construction is complete at piers 14 and 15. For Frame 4 cast on falsework, barrier rails, approach slab work, isolation casing covers, grading for drainage and slope paving are complete and continuing with exterior dry finish work. The falsework on Frame 1 is complete up to Pier 17.

**Contract Issues**

Issue	Mitigating Action
The lightweight concrete mix design is generating an unacceptable amount of heat as it cures; extraordinary measures are being taken to cool the concrete to avoid cracking and extend the life of the bridge. This heat was not anticipated in the project specifications. The cost and schedule impacts of this risk issue are dependent upon the actions taken to mitigate the higher temperatures. This issue may delay completion of the main span.	Actions to lower the temperatures include producing the concrete with ice, introducing liquid nitrogen into the concrete prior to placement, and placing cooling tubes in the concrete elements. Caltrans, together with the Contractor, negotiated the scope of CCO 133, and agreed on the cost and schedule impact. This was presented and approved by TBPOC in their September 2005 meeting.
The estimate at completion for the contract is significantly higher than the current budget for the project. As reported to the BATA Oversight Committee in April 2005, Caltrans has identified significant potential cost increases that are due to a number of issues, including delays, lightweight concrete issues, and additional costs for foundation construction joints.	While the potential cost increases have been incorporated into the estimate at completion, BATA continues to work on a comprehensive funding package to cover the cost of the overruns. BATA staff has also directed Caltrans and BATA's consultant team to reforecast the entire project cost to identify any additional potential risk items.

**Recent TBPOC Actions:** In October 2005, the TBPOC approved CCO's 109.4 (Pile Construction Joint Repair), 110.5 (Pile Anomaly Repair) and 133.1 (Heat of Hydration). In November 2005, the TBPOC approved CCO 117.1 (Steel Escalation).

**Contract Photographs**

*New Bridge Frame 1 Cast of Falsework at Bents 15 to 17*



*New Bridge Approach Structure*



*New Bridge Pier 12 South*



*New Bridge Pier 15 Column*



## Regional Measure 1 Program

**New Benicia-Martinez Bridge Project Summary**► **OTHER CONTRACTS AND RELATED PROJECT ACTIVITIES**

**Contract Description:** Contracts related to the new Benicia-Martinez Bridge project involve the construction of a new toll plaza south of the new bridge in Contra Costa County with 17 toll booths, including two high-occupancy vehicle (HOV) bypass lanes, and the reconstruction of the I-680/Marina Vista Road and I-680/I-780 interchanges.

**Other Contracts and Related Activities Cost Summary (\$Millions)**

Contract	June 2005 BATA Budget	Approved Changes	Current Budget	Cost To Date (10/2005)	Estimate at Completion	Variance
a	b	c	d = b + c	e	f	g = f - d
Capital Outlay Support	72.2	-	72.2	71.2	80.0	7.8
Right-of-Way and Environmental Mitigation	20.4	-	20.4	12.0	20.4	-
Capital Outlay Construction						-
I-680/I-780 Interchange Replacement	76.3	-	76.3	66.6	92.0	15.7
I-680/Marina Vista Interchange Reconstruction	51.5	-	51.5	50.7	55.0	3.5
New Toll Plaza	24.3	-	24.3	17.6	26.0	1.7
Others	37.5	-	37.5	14.8	47.8	10.3
Total Capital Outlay Construction	189.6	-	189.6	149.7	220.8	31.2
<b>TOTAL</b>	<b>282.2</b>	<b>-</b>	<b>282.2</b>	<b>232.9</b>	<b>321.2</b>	<b>39.0</b>

*Note: Details may not sum to totals due to rounding effects.*

**Other Contracts and Related Activities Schedule Summary**

Project	Baseline Project Completion Date	Forecast Project Completion Date	Variance (Months)
I-680/Marina Vista Interchange Reconstruction	March 2006	March 2006	-
New Toll Plaza	June 2006	June 2006	-
I-680/I-780 Interchange Replacement	December 2007	February 2008	2



**Contract Status:**

**Toll Plaza and Administration Building:** The contract is 78 % complete. Work continued on the electrical locks and door card readers, as well as the controls for the roof HVAC unit's #'s 8 and 9 at the Administration Building. Metal framing installation for ceiling and fascia of the canopy, and window glazing aluminum frames at the Toll Booths are on-going. All the main beams and columns of the Courtyard Canopy were installed and bolting and welding commenced, but was temporarily suspended due to Contractor fabricator/detailing errors. However, work resumed after resolution to some of the detailing/fabrication issues was provided and approved. AC paving work was completed at the east and west side of the parking areas next to the Administration Building.

**I-680/I-780 Interchange:** The contract is approximately 72% complete. All footings, bents, and columns for Bridge 215, which is the northbound I-680 connection from pier 17, are complete, and superstructure works are in progress. All foundations, bents, and columns for bridges 212 and 214, the westbound I-780 connector, are complete. Stressing at wing walls and backfill (Abutments 1 and 4) of Bridge 214 were completed this month. Superstructure work is in progress for bridge 212 and 215. Cooling pipes at Bents 20 of Bridge 212 and Bent 21 of Bridge 215 are also installed. The completion of final electrical work is delayed until February 2008.

**I-680/Marina Vista Interchange:** The contract is approximately 94% complete. Falsework removals for the Mococo Overhead Bridge and the On Ramp Bridge have been completed, and falsework materials continued to be demobilized. All Retaining Wall #1 footings are completed and stem wall construction in progress. The Mococo Road grinding and AC Overlay operations, as well as, the drainage system 4 inlet and collar work were completed this period. Final placement of the Expandable Polystyrene (EPS) Block has started.

**Wetland Mitigation:** The contract is 97% complete and is scheduled for completion in February 2006. The excavation of channel A by the two "water mogs," south of the railroad tracks towards the bay, was completed. The temporary AC RR crossing was also removed.

**Contract Issues**

Issue	Mitigating Action
The estimate at completion for the project is significantly higher than the current budget for the project. As reported to the BATA Oversight Committee in April 2005, Caltrans has identified significant potential cost increases due to a number of issues, including delays as a result of the delay to the new bridge contract.	While the potential cost increases have been incorporated into the estimate at completion, BATA continues to work on a comprehensive funding package to cover the cost of the overruns. BATA staff has also directed Caltrans and BATA's consultant team to reforecast the entire project cost to identify any additional costs.

**Recent TBPOC Actions:** In October 2005, concerning the I-680/Marina Vista Interchange, the TBPOC approved CCO's 25 (Contaminated Soils), and 31 (Water Treatment). Concerning the I-680/I-780 Interchange, the TBPOC approved CCO's 37.2 (Bent 14 Differing Site Conditions), and 70 (Bent 18 Differing Site Conditions).

## Regional Measure 1 Program

### New Carquinez Bridge Project

**Project Description:** The new Carquinez Bridge project involves constructing a new suspension bridge west of the existing bridges with four westbound lanes and a bicycle/pedestrian lane and demolishing the existing 1927 bridge.

#### New Carquinez Bridge Cost Summary (\$Millions)

Contract	June 2005 BATA Budget	Approved Changes	Current Budget	Cost To Date (10/2005)	Estimate at Completion	Variance
a	b	c	d = b + c	e	f	g = f - d
Capital Outlay Support	124.4	-	124.4	113.7	125.4	1.0
Capital Outlay Construction						-
Replacement Bridge	253.3	-	253.3	253.0	256.3	3.0
South Interchange Reconstruction	73.9	-	73.9	71.8	73.9	-
Existing 1927 Bridge Demolition	35.2	-	35.2	14.8	35.2	-
Other	29.3	-	29.3	25.2	28.4	(0.9)
Project Reserve	12.1	-	12.1	-	9.0	(3.1)
<b>TOTAL</b>	<b>528.2</b>	<b>-</b>	<b>528.2</b>	<b>478.5</b>	<b>528.2</b>	<b>-</b>

*Note: Details may not sum to totals due to rounding effects.*

#### New Carquinez Bridge Schedule Summary

Contract	Baseline Project Completion Date	Forecast Project Completion Date	Variance (Months)
New Carquinez Bridge	November 2003*	November 2003*	-
1927 Carquinez Bridge Demolition	December 2007	September 2007	(3)
Landscaping	August 2011	August 2011	-

\* The date shown is for the opening of the bridge to traffic.

**Project Status:** The replacement bridge and all its approaches are complete and opened to traffic. The 1927 Bridge Demolition contract was awarded on April 4, 2005. Work was started on April 21, 2005. A traffic switch for eastbound Route 80 traffic and associated 1958 bridge deck approach rehabilitation work began on September 26, 2005. The work was completed and traffic switched back onto the 1958 bridge on November 10, 2005. Demolition of the 1927 bridge will follow. The new temporary trestle and the Unit 1 falsework foundation for the demolition of the 1927 Main Span have been completed.

#### Project Issues:

Issue	Mitigating Action
On the Replacement Carquinez Bridge Contract, the Contractor has submitted claims for various contract issues, including claims on fabrication, labor, and access.	Caltrans is in the process of evaluating the merits of the final claims. BATA staff will direct BATA's consultant team to also evaluate the claims to determine project risk. Project reserves may need to be used.

**Project Photographs**

*1958 Carquinez Bridge Approach New Deck Surface 1*



*1958 Carquinez Bridge Approach New Deck Surface 2*



*1958 Carquinez Bridge Approach Seismic Monitoring Pit*



*1927 Carquinez Bridge Demolition New Temporary Trestles & Piles 1*



*1927 Carquinez Bridge Demolition New Temporary Trestles & Piles 2*



*New Carquinez Bridge*

## Regional Measure 1 Program

### **Richmond-San Rafael Bridge (RSRB) Trestle, Fender, and Deck Joint Rehabilitation Project**

**Project Description:** This contract involves replacing the western trestle section of the bridge near San Rafael, rehabilitating the ship collision fender system at various piers, and rehabilitation of joints on the bridge deck.

#### **RSRB Trestle, Fender, and Deck Joint Rehabilitation Cost Summary (\$Millions)**

Contract	June 2005 BATA Budget	Approved Changes	Current Budget	Cost To Date (10/2005)	Estimate at Completion	Variance
a	b	c	d = b + c	e	f	g = f - d
RSR Trestle, Fender, and Joint Rehabilitation						
Capital Outlay Support	10.8	-	10.8	11.8	12.7	1.9
Capital Outlay Construction	91.3	-	91.3	83.1	84.4	(6.9)
Project Reserve	-	-	-	-	-	-
<b>TOTAL</b>	<b>102.1</b>	<b>-</b>	<b>102.1</b>	<b>94.9</b>	<b>97.1</b>	<b>(5.0)</b>

*Note: Details may not sum to totals due to rounding effects.*

*The Deck Joint Rehabilitation work is funded from RM1 and from Toll Bridge Seismic Retrofit Program (\$16.9 million) funds. In July 2005, BATA rescinded \$16.9 million in RM1 funds from the deck joint project. An equivalent amount of seismic retrofit funding will be used on the project. This action was taken to make additional RM 1 funds available for the Benicia-Martinez Bridge New Span project. The budget for the Richmond-San Rafael Bridge Seismic Retrofit project, shown on page 24 of this report, includes \$16.9 million of costs for the deck joint rehabilitation work.*

#### **RSRB Trestle, Fender, and Deck Joint Rehabilitation Schedule Summary**

Contract	Baseline Contract Completion Date	Forecast Contract Completion Date	Variance (Months)
Richmond-San Rafael Bridge Trestle, Fender, and Deck Joint Rehabilitation	August 2005	August 2005	-

**Project Status:** Work on this project is completed.

**Project Issues:** None

#### **Project Photographs**



*Repaired Deck Joints-Lower Deck*



*Richmond-San Rafael Trestle*



## Regional Measure 1 Program

### Richmond-San Rafael Bridge (RSRB) Deck Overlay Project

**Project Description:** Rehabilitate the existing concrete deck on the bridge, damaged due to traffic and exposure to a marine environment.

#### RSRB Deck Overlay Cost Summary (\$Millions)

Contract	June 2005 BATA Budget	Approved Changes	Current Budget	Cost To Date (10/2005)	Estimate at Completion	Variance
a	b	c	d = b + c	e	f	g = f - d
RSR Deck Overlay						
Capital Outlay Support	8.0	-	8.0	1.5	8.0	-
Capital Outlay Construction	16.9	-	16.9	-	20.7	3.8
<b>TOTAL</b>	<b>24.9</b>	<b>-</b>	<b>24.9</b>	<b>1.5</b>	<b>28.7</b>	<b>3.8</b>

*Note: Details may not sum to totals due to rounding effects.*

#### RSRB Deck Overlay Schedule Summary

Contract	Baseline Contract Completion Date	Forecast Contract Completion Date	Variance (Months)
Richmond-San Rafael Bridge Deck Overlay Rehabilitation	January 2007	January 2007	-

**Project Status:** A fund request was submitted to BATA in September 2005 requesting \$20.7 million for construction. The toll funded portion of Capital Outlay Support is programmed at \$4 million. This project is Ready to List. Design is complete, and this project will be advertised when BATA approves funding for allocation. BATA staff is reviewing the Caltrans project estimate.

#### Project Issues:

Issue	Mitigating Action
Caltrans has reported a higher than budgeted estimate for the project.	BATA staff will review the revised estimate for the project to determine an appropriate recommendation to BATA. Additional funds maybe allocated from the BATA Toll Bridge Rehabilitation Program.

#### Project Photographs



RSR Concrete Deck Overlay



## Regional Measure 1 Program

### Interstate 880/State Route 92 Interchange Reconstruction Project

**Project Description:** Modify the existing cloverleaf interchange to increase capacity and improve safety and traffic operations.

#### Interstate 880/State Route 92 Interchange Cost Summary (\$Millions)

Contract	June 2005 BATA Budget	Approved Changes	Current Budget	Cost To Date (10/2005)	Estimate at Completion	Variance
a	b	c	d = b + c	e	f	g = f - d
I-880/SR-92 Interchange Improvement						
Capital Outlay Support	28.8	-	28.8	25.3	43.2	14.4
Capital Outlay Construction	94.8	-	94.8	-	119.0	24.2
Capital Outlay Right-of-Way	9.9	-	9.9	7.3	13.0	3.1
Project Reserve	0.3	-	0.3	-	11.1	10.8
<b>TOTAL</b>	<b>133.8</b>	<b>-</b>	<b>133.8</b>	<b>32.6</b>	<b>186.3</b>	<b>52.5</b>

*Note: Details may not sum to totals due to rounding effects. \$9.6 million in ACTA funds included under Capital Outlay Construction. \$3.7 million included in Capital Outlay Construction for separate landscape contract.*

#### Interstate 880/State Route 92 Interchange Schedule Summary

Project	Baseline Project Completion Date	Forecast Project Completion Date	Variance (Months)
I-880/SR-92 Interchange Reconstruction	November 2010	December 2010	1

**Project Status:** Caltrans continues work on the preparation of the PS&E package with 100% completion scheduled for January 10, 2006. Design work was delayed due to resolution of utility conflicts, and design and construction staging refinements. Design is 95% complete. Caltrans is pursuing offsite third party wetland mitigation due to 1) limited areas within the project limits that is suitable to accommodate the wetland mitigation ratio of 3:1 required the Water Board and 2) as a means of avoiding future maintenance costs. Additional right of way funds will be required to pay for off-site wetland mitigation. Right-of-way acquisition is in progress. Current right of way parcel count is 70 parcels. Of the 70 parcels, right of way from 50 parcels has been acquired. Condemnation was avoided for one utility easement. Condemnation might be necessary on parcel owned by PG&E to accommodate soundwall footing easement. Caltrans is working with PG&E on the relocation of 6 poles near Lindenwood Way. Undergrounding the utilities at this location is likely. Demolition of 10 of the 12 homes is scheduled to begin in December 2005. The remaining 2 homes may be sold with proceeds going back into the project. \$1.4 million in federal SAFETEA LU funds have been earmarked for this project. Contract package is scheduled to be advertised by August 2006 and start of construction in November 2006.

#### Project Issues:

Issue	Mitigating Action
Later than anticipated approval of the environmental clearance documents has delayed project delivery by 14 months. This delay among other reasons has contributed to an increase in estimated costs due to escalation.	BATA and Caltrans will perform a complete re-evaluation of the schedule impact with the issuance of the 100% PS&E, and will also determine work-around options that would mitigate the delay to the project. BATA will also review the entire project cost with the 100% PS&E.
The forecast schedule includes an aggressive schedule for right-of-way acquisition that provides for 18 months to clear numerous parcels in the project area.	The impact of right-of-way acquisitions on the schedule will be determined during the previously mentioned schedule assessment. The construction contract will be advertised with an A+B specification, which could reduce the construction duration and recover the project schedule.

## Regional Measure 1 Program

### Other Completed Regional Measure 1 (RM1) Projects

**Summary Description:** Other completed Regional Measure 1 projects are the following: (a) Widen the San Mateo-Hayward Bridge along its low-trestle section and its eastern approach, (b) Widen the Bayfront Expressway (SR 84) from the Dumbarton Bridge to the U.S. 101/Marsh Road interchange, (c) Construct an eastern approach (Richmond Parkway) between the Richmond-San Rafael Bridge and Interstate 80 near Pinole, and (d) Modify the U.S. 101/University Avenue interchange.

#### Other Completed RM1 Projects Cost Summary (\$Millions)

Contract	June 2005 BATA Budget	Approved Changes	Current Budget	Cost To Date (10/2005)	Estimate at Completion	Variance
a	b	c	d = b + c	e	f	g = f - d
San Mateo-Hayward Bridge Widening Project	217.8	-	217.8	208.5	211.9	(5.9)
Bayfront Expressway Widening Project	35.3	-	35.3	33.0	34.9	(0.4)
Richmond Parkway Project	5.9	-	5.9	3.9	5.9	-
Others	3.8	-	3.8	3.7	3.8	-
<b>TOTAL</b>	<b>262.8</b>	<b>-</b>	<b>262.8</b>	<b>249.1</b>	<b>256.5</b>	<b>(6.3)</b>

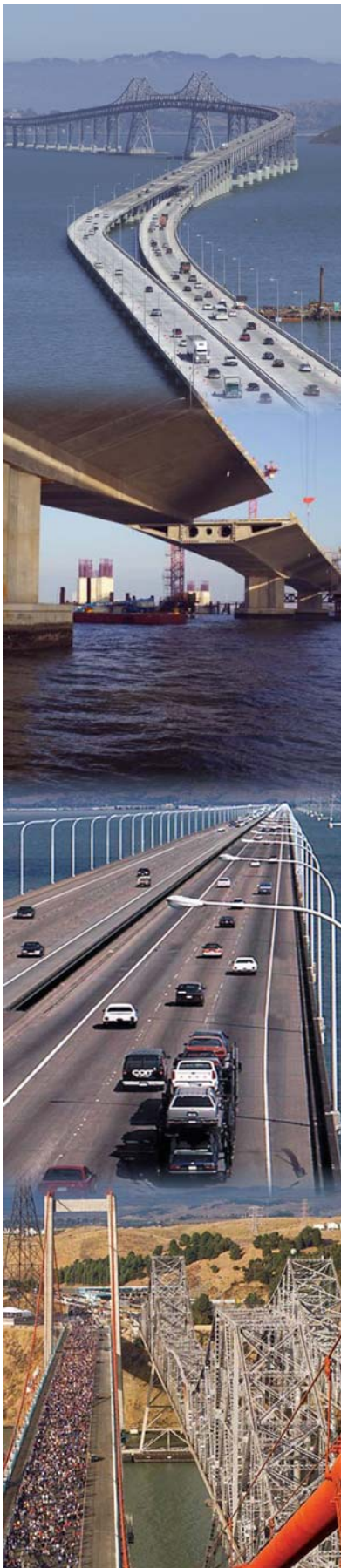
#### Schedule Summary

Project	Actual Project Completion Date
Richmond Parkway Project	May 2001
San Mateo-Hayward Bridge Widening Project	February 2003
Bayfront Expressway Widening Project	January 2004
Other	April 2004

**Project Status:** Construction has been completed on the above listed contracts.

**Project Issues:** None.

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## APPENDICES

- A** Toll Bridge Seismic Retrofit Program:  
San Francisco-Oakland Bay Bridge (SFOBB) East Span Replacement Project Cost  
Detail
- B** Toll Bridge Seismic Retrofit Program Cost Detail
- C** Toll Bridge Seismic Retrofit Program Summary Schedule
- D** Regional Measure 1 Program Cost Detail
- E** Regional Measure 1 Program Summary Schedule

## Appendix A: Toll Bridge Seismic Retrofit Program (\$Millions)

**San Francisco-Oakland Bay Bridge (SFOBB) East Span Replacement Project Cost Detail**

Contract	EA Number	AB 144 / SB 66 Budget	Approved Changes	Current Budget	Actual Cost To Date (10/2005)	Estimate at Completion	At-Completion Variance
a	b	c	d	e = c + d	f	g	h = g - e
<b>San Francisco-Oakland Bay Bridge East Span Replacement Project</b>							
<b>East Span - Skyway</b>	<b>01202X</b>						
Capital Outlay Support		197.0	-	197.0	115.1	197.0	-
Capital Outlay Construction		1,293.0	-	1,293.0	928.3	1,293.0	-
<b>Total</b>		1,490.0	-	1,490.0	1,043.4	1,490.0	-
<b>East Span - SAS Superstructure</b>	<b>0120FX</b>						
Capital Outlay Support		214.6	-	214.6	14.7	214.6	-
Capital Outlay Construction		1,753.7	-	1,753.7	-	1,767.4	13.7
<b>Total</b>		1,968.3	-	1,968.3	14.7	1,982.0	13.7
<b>East Span - SAS E2/T1 Foundations</b>	<b>0120EX</b>						
Capital Outlay Support		52.5	-	52.5	7.3	52.5	-
Capital Outlay Construction		313.5	-	313.5	65.7	313.5	-
<b>Total</b>		366.0	-	366.0	73.0	366.0	-
<b>SAS W2 Foundations</b>	<b>0120CX</b>						
Capital Outlay Support		10.0	-	10.0	9.2	10.0	-
Capital Outlay Construction		26.4	-	26.4	25.7	26.4	-
<b>Total</b>		36.4	-	36.4	34.9	36.4	-
<b>YBI Transition Structures</b>	<b>0120PX</b>						
Capital Outlay Support		78.7	-	78.7	7.3	78.7	-
Capital Outlay Construction		299.3	-	299.3	-	318.4	19.1
<b>Total</b>		378.0	-	378.0	7.3	397.1	19.1
<b>Oakland Touchdown</b>	<b>01204X</b>						
Capital Outlay Support		74.4	-	74.4	18.9	92.1	17.7
Capital Outlay Construction		283.8	-	283.8	-	272.7	(11.1)
<b>Total</b>		358.2	-	358.2	18.9	364.8	6.6
<b>YBI South/South Detour</b>	<b>0120RX</b>						
Capital Outlay Support		29.5	-	29.5	13.3	29.5	-
Capital Outlay Construction		131.9	-	131.9	28.7	133.8	1.9
<b>Total</b>		161.4	-	161.4	42.0	163.3	1.9
<b>Existing Bridge Demolition</b>	<b>01209X</b>						
Capital Outlay Support		79.7	-	79.7	0.2	79.7	-
Capital Outlay Construction		239.2	-	239.2	-	222.0	(17.2)
<b>Total</b>		318.9	-	318.9	0.2	301.7	(17.2)
<b>YBI/SAS Archeology</b>	<b>01207X</b>						
Capital Outlay Support		1.1	-	1.1	1.1	1.1	-
Capital Outlay Construction		1.1	-	1.1	1.1	1.1	-
<b>Total</b>		2.2	-	2.2	2.2	2.2	-

Note: Details may not sum to totals due to rounding



## Appendix A: Toll Bridge Seismic Retrofit Program (\$Millions)

**San Francisco-Oakland Bay Bridge (SFOBB) East Span Replacement Project Cost Detail (Cont.)**

Contract	EA Number	AB 144 / SB 66 Budget	Approved Changes	Current Budget	Actual Cost To Date (10/2005)	Estimate at Completion	At-Completion Variance
a	b	c	d	e = c + d	f	g	h = g - e
<b>YBI - USCG Road Relocation</b>	<b>0120QX</b>						
Capital Outlay Support		3.0	-	3.0	2.7	3.0	-
Capital Outlay Construction		3.0	-	3.0	2.8	3.0	-
<b>Total</b>		6.0	-	6.0	5.5	6.0	-
<b>YBI - Substation and Viaduct</b>	<b>0120GX</b>						
Capital Outlay Support		6.5	-	6.5	6.3	6.5	-
Capital Outlay Construction		11.6	-	11.6	11.2	11.6	-
<b>Total</b>		18.1	-	18.1	17.5	18.1	-
<b>Oakland Geofill</b>	<b>01205X</b>						
Capital Outlay Support		2.5	-	2.5	2.5	2.5	-
Capital Outlay Construction		8.2	-	8.2	8.2	8.2	-
<b>Total</b>		10.7	-	10.7	10.7	10.7	-
<b>Pile Installation Demonstration Project</b>	<b>01208X</b>						
Capital Outlay Support		1.8	-	1.8	1.8	1.8	-
Capital Outlay Construction		9.2	-	9.2	9.2	9.2	-
<b>Total</b>		11.0	-	11.0	11.0	11.0	-
<b>Stormwater Treatment Measures</b>	<b>0120JX</b>						
Capital Outlay Support		6.0	-	6.0	3.7	6.0	-
Capital Outlay Construction		15.0	-	15.0	-	15.0	-
<b>Total</b>		21.0	-	21.0	3.7	21.0	-
<b>Right-of-Way and Environmental Mitigation</b>	<b>0120X9</b>						
Capital Outlay Support		-	-	-	-	-	-
Capital Outlay & Right-of-Way		72.4	-	72.4	38.7	72.4	-
<b>Total</b>		72.4	-	72.4	38.7	72.4	-
<b>Sunk Cost - Existing East Span Retrofit</b>	<b>04343X &amp; 04300X</b>						
Capital Outlay Support		39.5	-	39.5	39.5	39.5	-
Capital Outlay Construction		30.8	-	30.8	30.8	30.8	-
<b>Total</b>		70.3	-	70.3	70.3	70.3	-
<b>Other Capital Outlay Support</b>							
Environmental Phase		97.7	-	97.7	97.7	97.7	-
Pre-Split Project Expenditures		44.9	-	44.9	44.9	44.9	-
Non-project Specific Costs		20.0	-	20.0	3.2	20.0	-
<b>Total</b>		162.6	-	162.6	145.8	162.6	-
<b>Subtotal East Span Capital Outlay Support</b>		959.4	-	959.4	389.4	977.1	17.7
<b>Subtotal East Span Capital Outlay Construction &amp; Sunk Costs</b>		4,492.1	-	4,492.1	1,150.4	4,498.5	6.0
<b>Other Budgeted Capital</b>		35.1	-	35.1	-	11.0	(24.1)
<b>Total SFOBB East Span Replacement Project</b>		<b>5,486.6</b>	<b>-</b>	<b>5,486.6</b>	<b>1,539.8</b>	<b>5,486.6</b>	<b>-</b>

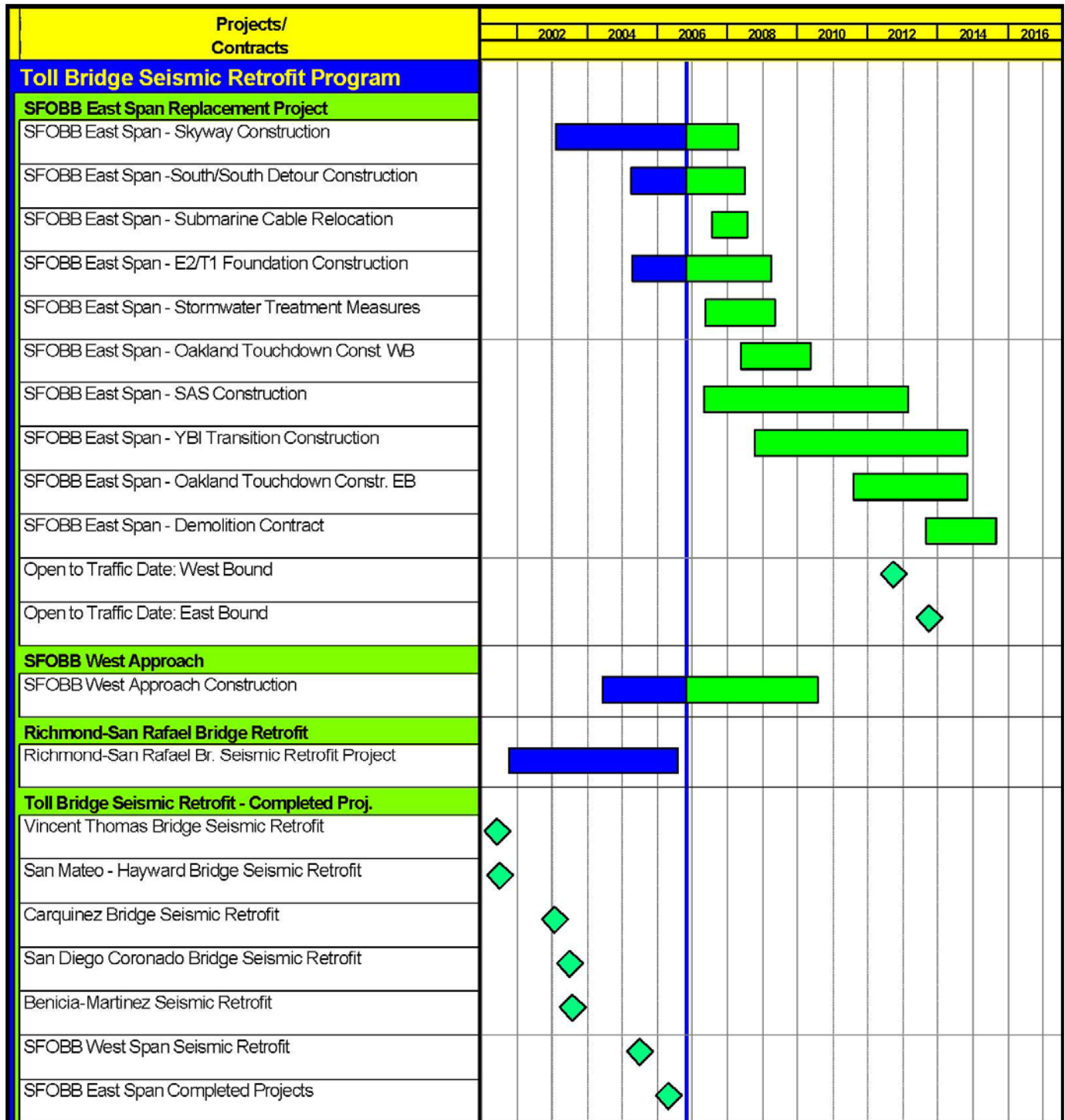
Note: Details may not sum to totals due to rounding

## Appendix B: Toll Bridge Seismic Retrofit Program Cost Detail (\$Millions)

Project	AB 144 / SB 66 Budget	Approved Changes	Current Budget	Actual Cost To Date (10/2005)	Estimate at Completion	At-Completion Variance
a	c	d	e = c + d	f	g	h = g - e
<b>SFOBB East Span Replacement Project</b>						
Capital Outlay Support	959.4	-	959.4	389.4	977.1	17.7
Capital Outlay Construction	4,492.1	-	4,492.1	1,150.4	4,498.5	6.4
Other Budgeted Capital	35.1	-	35.1	-	11.0	(24.0)
<b>Total</b>	<b>5,486.6</b>	<b>-</b>	<b>5,486.6</b>	<b>1,539.8</b>	<b>5,486.6</b>	<b>-</b>
<b>SFOBB West Approach Replacement</b>						
Capital Outlay Support	120.0	-	120.0	69.1	120.0	-
Capital Outlay Construction	309.0	-	309.0	170.0	309.0	-
<b>Total</b>	<b>429.0</b>	<b>-</b>	<b>429.0</b>	<b>239.1</b>	<b>429.0</b>	<b>-</b>
<b>SFOBB West Span Retrofit</b>						
Capital Outlay Support	75.0	-	75.0	74.8	75.0	-
Capital Outlay Construction	232.9	-	232.9	230.4	232.9	-
<b>Total</b>	<b>307.9</b>	<b>-</b>	<b>307.9</b>	<b>305.2</b>	<b>307.9</b>	<b>-</b>
<b>Richmond-San Rafael Bridge Retrofit</b>						
Capital Outlay Support	134.0	-	134.0	121.9	127.0	(7.0)
Capital Outlay Construction	780.0	-	780.0	662.8	698.0	(82.0)
<b>Total</b>	<b>914.0</b>	<b>-</b>	<b>914.0</b>	<b>784.7</b>	<b>825.0</b>	<b>(89.0)</b>
<b>Benicia-Martinez Bridge Retrofit</b>						
Capital Outlay Support	38.1	-	38.1	38.1	38.1	-
Capital Outlay Construction	139.7	-	139.7	139.7	139.7	-
<b>Total</b>	<b>177.8</b>	<b>-</b>	<b>177.8</b>	<b>177.8</b>	<b>177.8</b>	<b>-</b>
<b>Carquinez Bridge Retrofit</b>						
Capital Outlay Support	28.7	-	28.7	28.8	28.7	-
Capital Outlay Construction	85.5	-	85.5	85.4	85.5	-
<b>Total</b>	<b>114.2</b>	<b>-</b>	<b>114.2</b>	<b>114.2</b>	<b>114.2</b>	<b>-</b>
<b>San Mateo-Hayward Bridge Retrofit</b>						
Capital Outlay Support	28.1	-	28.1	28.1	28.1	-
Capital Outlay Construction	135.4	-	135.4	135.3	135.4	-
<b>Total</b>	<b>163.5</b>	<b>-</b>	<b>163.5</b>	<b>163.4</b>	<b>163.5</b>	<b>-</b>
<b>Vincent Thomas Bridge Retrofit (Los Angeles)</b>						
Capital Outlay Support	16.4	-	16.4	16.4	16.4	-
Capital Outlay Construction	42.1	-	42.1	42.1	42.1	-
<b>Total</b>	<b>58.5</b>	<b>-</b>	<b>58.5</b>	<b>58.5</b>	<b>58.5</b>	<b>-</b>
<b>San Diego-Coronado Bridge Retrofit</b>						
Capital Outlay Support	33.5	-	33.5	33.2	33.5	-
Capital Outlay Construction	70.0	-	70.0	69.4	70.0	-
<b>Total</b>	<b>103.5</b>	<b>-</b>	<b>103.5</b>	<b>102.6</b>	<b>103.5</b>	<b>-</b>
<b>Subtotal East Span Capital Outlay Support</b>	<b>1,433.2</b>	<b>-</b>	<b>1,433.2</b>	<b>799.8</b>	<b>1,443.9</b>	<b>10.7</b>
<b>Subtotal East Span Capital Outlay &amp; Sunk Costs</b>	<b>6,286.7</b>	<b>-</b>	<b>6,286.7</b>	<b>2,685.5</b>	<b>6,211.1</b>	<b>(75.6)</b>
<b>Subtotal Other Budgeted Capital</b>	<b>35.1</b>	<b>-</b>	<b>35.1</b>	<b>-</b>	<b>11.0</b>	<b>(24.0)</b>
<b>Miscellaneous Program Costs</b>	<b>30.0</b>	<b>-</b>	<b>30.0</b>	<b>24.9</b>	<b>30.0</b>	<b>-</b>
<b>Subtotal Toll Bridge Seismic Retrofit Program</b>	<b>7,785.0</b>	<b>-</b>	<b>7,785.0</b>	<b>3,510.2</b>	<b>7,696.0</b>	<b>(89.0)</b>
<b>Program Contingency</b>	<b>900.0</b>	<b>-</b>	<b>900.0</b>	<b>-</b>	<b>989.0</b>	<b>89.0</b>
<b>Total Toll Bridge Seismic Retrofit Program</b>	<b>8,685.0</b>	<b>-</b>	<b>8,685.0</b>	<b>3,510.2</b>	<b>8,685.0</b>	<b>-</b>

Note: Details may not sum to totals due to rounding

## Appendix C: Toll Bridge Seismic Retrofit Program Summary Schedule



## Appendix D: Regional Measure 1 Program Cost Detail (\$Millions)

Project	EA Number	June 2005 Budget	Approved Changes	Current Budget	Actual Cost To Date (10/2005)	Estimate at Completion	At-Completion Variance
a	b	c	d	e = c + d	f	g	h = g - e
<b>New Benicia-Martinez Bridge Project</b>							
<b>New Bridge</b>	<b>00603_</b>						
Capital Outlay Support		84.9	-	84.9	67.6	98.0	13.1
Capital Outlay Construction				-			-
BATA Funding		661.9	-	661.9	544.0	773.9	112.0
Non-BATA Funding		10.1	-	10.1	13.9	10.1	-
Subtotal		672.0	-	672.0	557.9	784.0	112.0
<b>Total</b>		756.9	-	756.9	625.5	882.0	125.1
<b>I-680/I-780 Interchange Reconstruction</b>							
	<b>00606_</b>						
Capital Outlay Support							
BATA Funding		24.9	-	24.9	25.2	26.6	1.7
Non-BATA Funding		1.4	-	1.4	5.2	1.4	-
Subtotal		26.3	-	26.3	30.4	28.0	1.7
Capital Outlay Construction							
BATA Funding		54.7	-	54.7	54.8	70.4	15.7
Non-BATA Funding		21.6	-	21.6	11.8	21.6	(0.0)
Subtotal		76.3	-	76.3	66.6	92.0	15.7
<b>Total</b>		102.6	-	102.6	97.0	120.0	17.4
<b>I-680/Marina Vista Interchange Reconstruction</b>							
	<b>00605_</b>						
Capital Outlay Support		18.3	-	18.3	18.9	21.0	2.7
Capital Outlay Construction		51.5	-	51.5	50.7	55.0	3.5
<b>Total</b>		69.8	-	69.8	69.6	76.0	6.2
<b>New Toll Plaza and Administration Building</b>							
	<b>00604_</b>						
Capital Outlay Support		11.9	-	11.9	13.3	14.0	2.1
Capital Outlay Construction		24.3	-	24.3	17.6	26.0	1.7
<b>Total</b>		36.2	-	36.2	30.9	40.0	3.8
<b>Other Contracts</b>							
	<b>See note below</b>						
Capital Outlay Support		15.7	-	15.7	8.6	17.0	1.3
Capital Outlay Construction		37.5	-	37.5	14.8	47.8	10.3
Capital Outlay Right-of-Way		20.4	-	20.4	12.0	20.4	-
<b>Total</b>		73.6	-	73.6	35.4	85.2	11.6
<b>Subtotal BATA Capital Outlay Support</b>		155.7	-	155.7	133.6	176.6	20.9
<b>Subtotal BATA Capital Outlay Construction</b>		829.9	-	829.9	681.9	973.1	143.2
<b>Subtotal Capital Outlay Right-of-Way</b>		20.4	-	20.4	12.0	20.4	-
<b>Subtotal Non-BATA Capital Outlay Support</b>		1.4	-	1.4	5.2	1.4	-
<b>Subtotal Non-BATA Capital Outlay Construction</b>		31.7	-	31.7	25.7	31.7	(0.0)
<b>Project Reserves</b>		20.8	-	20.8	-	59.8	39.0
<b>Total New Benicia-Martinez Bridge Project</b>		<b>1,059.9</b>	<b>-</b>	<b>1,059.9</b>	<b>858.4</b>	<b>1,263.0</b>	<b>203.1</b>

## Notes:

Includes EA's 00601\_, 00608\_, 00609\_, 0060A\_, 0060C\_, 0060E\_, 0060F\_, 0060G\_, and 0060H\_ and all Project Right-of-Way

Note: Details may not sum to totals due to rounding

## Appendix D: Regional Measure 1 Program Cost Detail (\$Millions) (Cont.)

Project	EA Number	June 2005 Budget	Approved Changes	Current Budget	Actual Cost To Date (10/2005)	Estimate at Completion	At-Completion Variance
a	b	c	d	e = c + d	f	g	h = g - e
<b>Carquinez Bridge Replacement Project</b>							
<b>New Bridge</b>	<b>01301_</b>						
Capital Outlay Support		60.5	-	60.5	59.8	62.3	1.8
Capital Outlay Construction		253.3	-	253.3	253.0	256.3	3.0
<b>Total</b>		<b>313.8</b>	<b>-</b>	<b>313.8</b>	<b>312.8</b>	<b>318.6</b>	<b>4.8</b>
<b>Crockett Interchange Reconstruction</b>	<b>01305_</b>						
Capital Outlay Support		32.0	-	32.0	31.9	32.0	-
Capital Outlay Construction		73.9	-	73.9	71.8	73.9	-
<b>Total</b>		<b>105.9</b>	<b>-</b>	<b>105.9</b>	<b>103.7</b>	<b>105.9</b>	<b>-</b>
<b>Existing 1927 Bridge Demolition</b>	<b>01309_</b>						
Capital Outlay Support		16.1	-	16.1	7.6	16.1	-
Capital Outlay Construction		35.2	-	35.2	14.8	35.2	-
<b>Total</b>		<b>51.3</b>	<b>-</b>	<b>51.3</b>	<b>22.4</b>	<b>51.3</b>	<b>-</b>
<b>Other Contracts</b>	<b>See note below</b>						
Capital Outlay Support		15.8	-	15.8	14.4	15.0	(0.8)
Capital Outlay Construction		18.8	-	18.8	15.3	17.9	(0.9)
Capital Outlay Right-of-Way		10.5	-	10.5	9.9	10.5	-
<b>Total</b>		<b>45.1</b>	<b>-</b>	<b>45.1</b>	<b>39.6</b>	<b>43.4</b>	<b>(1.7)</b>
<b>Subtotal BATA Capital Outlay Support</b>		<b>124.4</b>	<b>-</b>	<b>124.4</b>	<b>113.7</b>	<b>125.4</b>	<b>1.0</b>
<b>Subtotal BATA Capital Outlay Construction</b>		<b>381.2</b>	<b>-</b>	<b>381.2</b>	<b>354.9</b>	<b>383.3</b>	<b>2.1</b>
<b>Subtotal Capital Outlay Right-of-Way</b>		<b>10.5</b>	<b>-</b>	<b>10.5</b>	<b>9.9</b>	<b>10.5</b>	<b>-</b>
<b>Project Reserves</b>		<b>12.1</b>	<b>-</b>	<b>12.1</b>	<b>-</b>	<b>9.0</b>	<b>(3.1)</b>
<b>Total Carquinez Bridge Replacement Project</b>		<b>528.2</b>	<b>-</b>	<b>528.2</b>	<b>478.5</b>	<b>528.2</b>	<b>-</b>

**Notes:**

Other Contracts includes EA's 01302\_, 01303\_, 01304\_, 01306\_, 01307\_, 01308\_, 0130A\_, 0130C\_, 0130D\_, 0130F\_, 0130G\_, 0130H\_, 0130J\_, 00453\_, 00493\_, 04700\_, 00607\_, 2A270\_, and 29920\_ and all Project Right-of-Way

Note: Details may not sum to totals due to rounding



## Appendix D: Regional Measure 1 Program Cost Detail (\$Millions) (Cont.)

Project	EA Number	June 2005 Budget	Approved Changes	Current Budget	Actual Cost To Date (10/2005)	Estimate at Completion	At-Completion Variance
a	b	c	d	e = c + d	f	g	h = g - e
<b>Richmond-San Rafael Bridge Trestle, Fender, and Deck Joint Rehabilitation</b>							
	See note <sup>1</sup> below						
Capital Outlay Support							
BATA Funding		2.2	-	2.2	1.3	2.2	-
Non-BATA Funding		8.6	-	8.6	10.5	10.5	1.9
Subtotal		10.8	-	10.8	11.8	12.7	1.9
Capital Outlay Construction							
BATA Funding		40.2	-	40.2	33.4	33.3	(6.9)
Non-BATA Funding		51.1	-	51.1	49.7	51.1	-
Subtotal		91.3	-	91.3	83.1	84.4	(6.9)
Project Reserves		-	-	-	-	-	-
<b>Total</b>		102.1	-	102.1	94.9	97.1	(5.0)
<b>Richmond-San Rafael Bridge Deck Overlay Rehabilitation</b>							
	0415U_						
Capital Outlay Support							
BATA Funding		4.0	-	4.0	1.5	4.0	-
Non-BATA Funding		4.0	-	4.0	-	4.0	-
Subtotal		8.0	-	8.0	1.5	8.0	-
Capital Outlay Construction		16.9	-	16.9	-	20.7	3.8
Project Reserves		0.1	-	0.1	-	-	(0.1)
<b>Total</b>		25.0	-	25.0	1.5	28.7	3.7
<b>Richmond Parkway Project (RM 1 Share Only)</b>							
	Non-Caltrans						
Capital Outlay Support		-	-	-	-	-	-
Capital Outlay Construction		5.9	-	5.9	3.9	5.9	-
<b>Total</b>		5.9	-	5.9	3.9	5.9	-
<b>San Mateo-Hayward Bridge Widening</b>							
	See note <sup>2</sup> below						
Capital Outlay Support		34.6	-	34.6	34.0	34.6	-
Capital Outlay Construction		180.2	-	180.2	174.0	176.2	(4.0)
Capital Outlay Right-of-Way		1.5	-	1.5	0.5	0.6	(0.9)
Project Reserves		1.5	-	1.5	-	0.5	(1.0)
<b>Total</b>		217.8	-	217.8	208.5	211.9	(5.9)
<b>I-880/SR-92 Interchange Reconstruction</b>							
	EA's 23317_, 01601_, and 01602_						
Capital Outlay Support		28.8	-	28.8	25.3	43.2	14.4
Capital Outlay Construction							
BATA Funding		85.2	-	85.2	-	109.4	24.2
Non-BATA Funding		9.6	-	9.6	-	9.6	-
Subtotal		94.8	-	94.8	-	119.0	24.2
Capital Outlay Right-of-Way		9.9	-	9.9	7.3	13.0	3.1
Project Reserves		0.3	-	0.3	-	11.1	10.8
<b>Total</b>		133.8	-	133.8	32.6	186.3	52.5
<b>Bayfront Expressway Widening</b>							
	EA's 00487_, 01511_, and 01512_						
Capital Outlay Support		8.6	-	8.6	8.0	8.2	(0.4)
Capital Outlay Construction		26.5	-	26.5	24.8	26.5	-
Project Reserves		0.2	-	0.2	0.2	0.2	-
<b>Total</b>		35.3	-	35.3	33.0	34.9	(0.4)
<b>US 101/University Avenue Interchange Modification</b>							
	Non-Caltrans						
Capital Outlay Support		-	-	-	-	-	-
Capital Outlay Construction		3.8	-	3.8	3.7	3.8	-
<b>Total</b>		3.8	-	3.8	3.7	3.8	-
<b>Subtotal BATA Capital Outlay Support</b>		358.3	-	358.3	317.4	394.2	35.9
<b>Subtotal BATA Capital Outlay Construction</b>		1,569.8	-	1,569.8	1,276.6	1,732.2	162.4
<b>Subtotal Capital Outlay Right-of-Way</b>		42.3	-	42.3	29.7	44.5	2.2
<b>Subtotal Non-BATA Capital Outlay Support</b>		14.0	-	14.0	15.7	15.9	1.9
<b>Subtotal Non-BATA Capital Outlay Construction</b>		92.4	-	92.4	75.4	92.4	(0.0)
<b>Project Reserves</b>		35.0	-	35.0	0.2	80.6	45.6
<b>Total RM1 Program</b>		2,111.8	-	2,111.8	1,715.0	2,359.8	248.0

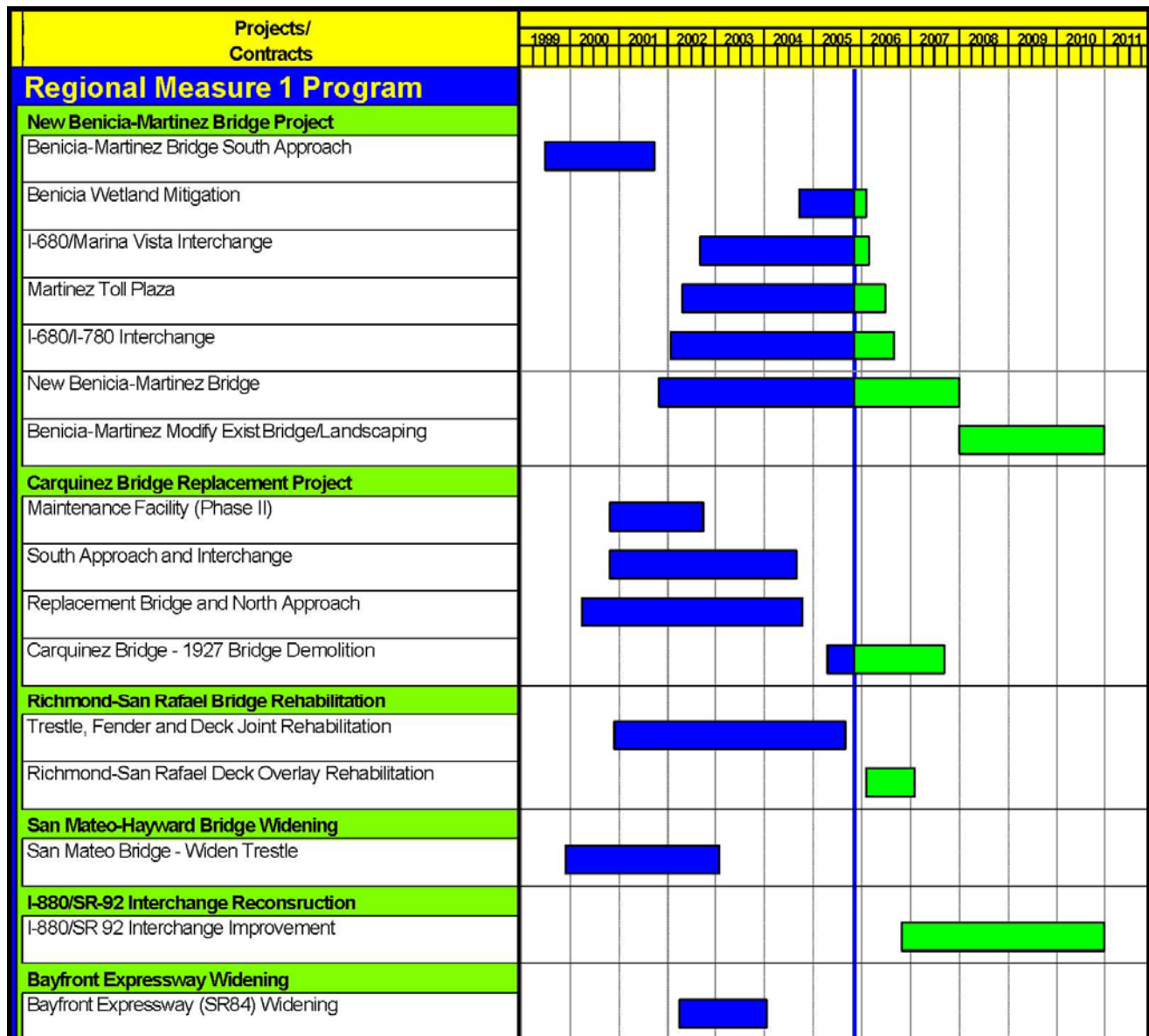
## Notes:

<sup>1</sup> Richmond-San Rafael Bridge Trestle, Fender, and Deck Joint Rehabilitation Includes Non-TBSRA Expenses for EA 0438U\_ and 04157\_

<sup>2</sup> San Mateo-Hayward Bridge Widening Includes EA's 00305\_, 04501\_, 04502\_, 04503\_, 04504\_, 04505\_, 04506\_, 04507\_, 04508\_, 04509\_, 27740\_, 27790\_, 04860\_

Note: Details may not sum to totals due to rounding

## Appendix E: Regional Measure 1 Program Summary Schedule



## Appendix F: Glossary of Terms

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**AB144/SB 66 BUDGET:** the planned allocation of resources for the Toll Bridge Seismic Retrofit Program, or subordinate projects or contracts, as provided in Assembly Bill 144 and Senate Bill 66, signed into law by Governor Schwarzenegger on July 18, 2005 and September 29, 2005, respectively.

**APPROVED CHANGES:** changes to the AB144/SB 66 Budget or June 2005 BATA Budget as approved by the Bay Area Toll Authority Commission.

**AT COMPLETION VARIANCE or VARIANCE (cost):** the mathematical difference between the Current Budget and the Estimate at Completion.

**COST TO DATE:** the actual expenditures incurred by the program, project, or contract as of the month and year shown.

**CURRENT BUDGET:** the sum of the AB144/SB66 Budget or June 2005 BATA Budget and Approved Changes.

**ESTIMATE AT COMPLETION:** the current forecast of all of the costs that are projected to be expended so as to complete the given scope of the program, project, or contract.

**JUNE 2005 BATA BUDGET:** the planned allocation of resources for the Regional Measure 1 Program, or subordinate projects or contracts as authorized by the Bay Area Toll Authority as of June 2005.

**PROJECT COMPLETE AB144/SB 66 BASELINE or BASELINE PROJECT (or CONTRACT) COMPLETION DATE:** the planned completion date for the Toll Bridge Seismic Retrofit Program or subordinate projects or contracts.

**PROJECT COMPLETE BASELINE:** the planned completion date for the Regional Measure 1 Program or subordinate projects or contracts.

**PROJECT COMPLETE FORECAST or FORECAST PROJECT (or CONTRACT) COMPLETION DATE:** the current projected date for the completion of the program, project, or contract.

**SCHEDULE VARIANCE or VARIANCE (schedule):** the mathematical difference expressed in months between the Baseline Completion Date and the Forecast Completion Date.

The following information is provided in accordance with California Government code Section 7550:

This document is one of a series of reports prepared for the Bay Area Toll Authority (BATA)/Metropolitan Transportation Commission (MTC) for the Toll Bridge Seismic Retrofit and Regional Measure 1 Programs. The contract value for the monitoring efforts, technical analysis, and field site works that contribute to these reports, as well as the report preparation and production, is \$1,574,873.

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